MINUTES OF THE MEETING OF THE NORTH CENTRAL CORN BREEDING RESEARCH COMMITTEE

--

1961

Reported by
G. F. Sprague, Secretary

Crops Research Division
Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE
CR-25-61 March 1961

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NORTH CENTRAL CORN BREEDING RESEARCH COMMITTEE

MORNING SESSION, MARCH 1

The North Central Corn Breeding Research Committee was called to order by Chairman W. R. Findley, Jr., at 9:00 a. m. The first order of business was a consideration of the sub-committee reports.

REPORT OF THE SUB-COMMITTEE ON THE PRESERVATION OF GERM PLASM

D. B. Shank reported there had been no activity by this committee during the past year and moved that the committee be disbanded. The motion was seconded by M. S. Zuber but was lost when put to a vote. The committee was continued for an additional year and charged with the task of obtaining a current list of open-pollinated varieties currently being maintained by the several Experiment Stations. It was also asked to encourage the individual Stations to place such varieties in storage at Ames, Iowa or the National Seed Stocks Facility at Fort Collins, Colorado.

REPORT OF THE SUB-COMMITTEE ON THE GROUPING OF LINES FOR BREEDING PURPOSES

This committee, in 1960, was asked to assemble information on all synthetics currently available in the Corn Belt. The synthetics maintained by each Station are listed below:

Illinois

Illinois High Oil, Illinois Low Oil, Illinois High Protein and Illinois Low Protein - Mass selected in isolated blocks and by bulk sib pollination since 1896 from Burr White.

Alexander High Oil Synthetic - recurrently selected from a beginning bulk of 56 open-pollinated varieties (list available upon request). Mean of original population - 4.36% oil; at end of first cycle - 5.6% oil.

The following are disease resistant synthetics. Some have a restricted base and not all of them may be maintained. All were allowed to open-pollinate in isolation in 1960. Equal quantities of seed of each component planted and from 100-200 ears harvested.

Ill. Synthetic 60A. Inbreds H49 and CI.90A crossed with R168, W22, and W23. The six single crosses allowed to open-pollinate in isolation in 1960. Leaf blight resistance and early maturity.

Ill. Synthetic 60B. Genter's Corn Belt Southern Synthetic crossed with U.S.D.A. Blight Resistant Double Double.

$$\frac{(CI.82B \times CI.83B) \times (CI.85B \times CI.86A)}{(CI.88A \times CI.90A) \times (CI.91B \times CI.93A)}$$

Bulk of 15 crossed ears allowed to open-pollinate in isolation in 1960. Disease resistance.

Ill. Synthetic 60C. U.S.D.A. Blight Resistant Double Double crossed with Inbreds R168, R160, B8, Ia 55:1473, Oh43, Oh45, Oh51A, and M14. Bulk of several crossed ears with each inbred allowed to open-pollinate in isolation in 1960. Leaf blight resistance and early maturity.

Ill. Synthetic 60D. Iowa Stiff Stalk Synthetic crossed with U.S.D.A. Blight Resistant Double Double. Bulk of 23 crossed ears allowed to open-pollinate in isolation in 1960. Blight resistance and stalk quality.

Ill. Synthetic 60E, U.S.D.A. Blight Resistant Double Double crossed with Inbreds W153R, W22, W23, W9, W16, W28, and W375. Bulk of several crossed ears with each inbred allowed to open-pollinate in isolation in 1960. Leaf blight resistance and early maturity.

Ill. Synthetic 60F. Genter's Corn Belt Southern Synthetic Crossed with Iowa Stiff Stalk Synthetic. Bulk of 21 crossed ears allowed to open-pollinate in isolation in 1960.

Ill. Synthetic 60G. Inbred GE 440 crossed with inbreds 187-2, Oh07, Hy-2, W16, W28, M14, W375, W23, R168, Cuzco, Blacks Yellow Dent, P.I. 172332, Oh45, and W153R. The 14 single crosses allowed to open-pollinate in isolation in 1960. Early maturity and resistance to rust and leaf blight. GE 440 has good blight resistance but contributes towards high ears and tight husks.

Ill. Synthetic 60H. U.S.D.A. Blight Resistant Double Double crossed with Synthetic A. Bulk of 15 crossed ears allowed to open-pollinate in 1960. Resistance to leaf blight.

Indiana

Indiana Synthetic A

-16 parent inbreds:

L97	K148	L503	Oh40B
NC7	187-2	CI.14	38-11
B18	WF9	W16	Tr
CI.7	L317	Os420	R4

-16 lines were combined into 8 single crosses and these were crossed in all combinations to give 28 double crosses. These were mixed to-gether in equal quantities before planting in 1951.

The synthetic has been maintained by allowing selected plants to interpollinate in isolation (usually 600-700 plants), or by self-pollinating selected plants. Selection has been for resistance to H. turcicum and H. maydis in artificially inoculated plants. Since 1956 selections have been maintained by selfing.

Indiana Synthetic B

-16 parent inbreds

NC34	K155	A131	W22
Hydll00.3	B10	A148	Oh33
CI.27	P8	A347	C103
K4	Hy	M14	540

-the lines were combined as described for Indiana Synthetic B. The synthetic has been maintained by allowing selected plants to interpollinate in isolation, or by self-pollinating selected plants. Selection has been for resistance to H. turcicum and H. maydis in artificial inoculated plants. After two generations of interpollination in isolation among selected plants and three generations of selfing in progenies of selected plants, nine single crosses were made from 18 selections. These were bulked, planted in isolation and selected plants allowed to interpollinate. Remnant seed from this planting has been bulked and saved.

Indiana Synthetic C

-16 parental lines

Oh45	Corn Borer Syn I	K148	CI.82B
Oh43	R74	H61	H51
WF9	R71	R39	H3238 (Neb)
Oh65	H49	(A234 x H16)(Ia)	CI.88A

-16 lines were combined into 8 single crosses, these into 4 double crosses and the latter paired in all possible (6) double-double crosses.

-the synthetic will be maintained by allowing selected plants to inter-pollinate in isolation, and by selfing selected plants.

-the synthetic was constituted as a source of resistance to leaf blight and stalk rot.

Indiana Synthetic D

-16 parent lines

Pa33	C103	B52	N5
B14	A257	R104	H57
B37	H55	MR20(Ia.)	Oh7L
B10	SSS9-22-2	H60	CI.90A

-16 lines were combined into 8 single crosses, these into 4 double crosses and the latter paired in all possible (6) double-double crosses. -the synthetic will be maintained by allowing selected plants to inter-pollinate in isolation, and by selfing selected plants.
-the synthetic was constituted as a source of resistance to leaf blight and stalk rot resistance.

Iowa

Early Synthetic - 24 inbred lines combined first into 3 double-double crosses:

A = (Minn. 7 x Minn. 11-28) x (Minn. 11 x Minn. 14) x ((Wisc R3 x Wisc. 3) x (Wisc. 6 x Wisc. 23))
B = ((Ia.153 x Ia.Mc869) x (Ia.GK643 x Ia.GK645)) x ((Wisc. 9 x Wisc. 25) x (Wisc. M13 x Wisc. R3))
C = ((Minn. 374 x Minn. 375) x (Minn.43 x Minn.49)) x ((Ia. Cl 447 x Ia.Web. 726) x (Ia.GK645 x Ia.GHL 868))

The 3 combinations A x B, A x C, and B x C were produced and equal quantities of seed of these combinations were composited. Originally maintained in isolated plot but more recently by controlled sib pollination among 400-500 plants with no selection.

Low Ear Synthetic - 16 lines synthetic combined as follows:

((KHLE x Ill.LE625-S4) x (MWLE x Ill.LE630-S4)) x ((Oh293 x Oh490K) x (Ind. WF9 x Ind. 66-24)) x ((Ind. T x B2 x Ind. Tr 9122) x (Ill. A x Ill.90)) x ((Ia.Cl 447 x Ia. St665) x (CI.4-8 x Ia. Bl356))
Originally maintained in isolated plot but more recently by controlled sib pollination among 400-500 plants with no selections.

Stiff Stalk Synthetic - 16 line synthetic combined as follows: ((Ia.I159 x Ia.I224) x (Ia. Os420 x Ia.WD456)) x ((Ind. 461-5 x Ill. I2E) x (((CI.617 x CI.540)) x ((Ill. Hy x Oh31 67B) x (Ind. AH83 x Ind. Tr 9-1-1-6)) x ((F1B-1-7-1 x A3G-3-1-3) x (CI.187-2 x LE23))
Originally maintained in isolated plot but more recently by controlled sib pollination among 400-500 plants with no selection.

Super Stiff Stalk Synthetic - made up of the following 10 lines developed from Stiff Stalk Synthetic: B10, B14 (including B14 Rf Rf, B14 wx wx and B14 R_p^4 R_p^4), B37, B39, B40, B43, B44, R101, (B11 x B13)-1-8, and SSS 312-3. The lines were combined into 5 single crosses, 10 double crosses and then 5 double-double crosses. Equal quantities of seed of the 5 double-double crosses will be composited and increased in isolation in 1961. These inbreds contain among them excellent combining ability, stalk strength, and root strength. The rust resistant gene R_p^4 from Cuzco has given seedling resistance to all cultures of *Puccinia sorghi*

Stiff Stalk Synthetic High Oil - developed from Stiff Stalk Synthetic through 3 cycles of recurrent selection

Waxy Stiff Stalk Synthetic High Oil - waxy high oil selections of B10 and B13 were each crossed to seven Stiff Stalk high oil selections and backcrossed once to these selections. Five high oil, waxy selections from the B13 series and seven from the B10 series were crossed in all possible single cross combinations. Equal numbers of seeds from the diallel crosses were composited to form the synthetic. It has been maintained by controlled sib-pollination among 400-500 plants with no selection.

waxy (Ill. Hi. Oil x Wx Os420) - high oil synthetic developed through 5 cycles of recurrent selection. It is maintained by controlled sib-pollination among 400-500 plants with no selection.

(I198 x Hy) Hi Oil - high oil synthetic developed through 2 cycles of recurrent selection. It is maintained by controlled sib pollination among 400-500 plants with no selection.

Corn Borer Synthetic No. 1 - 12 line synthetic combined as follows: (((R4 x K230) x (Ia.I205 x Oh40B)) x ((Hy x Oh07) x (Oh33 x Oh51A))) x (((p8 x L317) x CC5) x ((P8 x L317) x A340))
Originally maintained in isolated plot but more recently by controlled sib-pollination among 400-500 plants with no selection.

Corn Borer Synthetic No. 2 - 16 line synthetic combined as follows: (((Hy x 5-1-6) x (K230 x Oh51A)) x ((P8 x Kys) x (WF9 x N6)))) x (((L304A x 61-67) x (Oh07 x B2)) x ((5120 x CI.187-2) x (Oh33 x Oh40B)))
Originally maintained in isolated plot but more recently by controlled sib pollination among 400-500 plants with no selection.

Corn Borer Synthetic No. 3 - 16 line synthetic

CI.31A	((M14 x A206) x Oh4C)-33-1-2
B49	P-33-2-2 (selection from multiple cross)
(B33 x Oh43)-67-3	(WF9 x 458-1) sel
B53	(Pa.Sel)-755-228
(Minn. Syn. #1)-24	B55
(Pa. Int. Syn.)-22-4-1	HD225 (selection from multiple cross)
(Synthetic A)-97-1-2	MS1
(Midland)-8-1-2	W22

These selections were combined first into 8 single crosses and then 4 double crosses. The double crosses were combined into all possible double-double crosses. A composite seed sample of the double-double crosses will be planted in an isolated plot for seed increase in 1961. In subsequent years it will be maintained by controlled sib pollination among 400-500 plants with no selection. All of the parent lines are resistant to corn borer leaf feeding and among them are high combining ability, good root and stalk strength, and some resistance to Helminthosporium turcicum.

Long Ear Synthetic 12 line synthetic

Oh29	B56
W-17R-B	N25
B217 (waxy)	(Lane Comp.)-34
N22A	C103
B55	((M14 x A206) x Oh4C)-26
(B15 x B18)-16	(L317 x CI.187-2)-1-19

These lines were combined into 6 single crosses and then 3 double crosses. The double crosses were combined into all possible double-double crosses. A composite seed sample of the double-double crosses will be planted in an isolated plot for seed increase in 1961. In subsequent years it will be maintained by controlled sib pollination among 400-500 plants with no selection. The lines were selected for long ears and among them are high combining ability, good root and stalk strength, resistance to corn borer leaf feeding, resistance to Puccinia sorghi, and some resistance to Helminthosporium turcicum

Synthetic A - 16 line synthetic

CI.7	L317	Nc7	L97
WF9	Tr	Oh40B	CI.14
K148	38-11	B18	L503
CI.187-2	Os420	R4	W16

The lines were combined into 8 single crosses and then 4 double crosses. All possible combinations among the 4 double crosses were produced. A composite of these double-double crosses was grown in isolation on ground infested by corn root worm. Weakly rooted plants were removed before anthesis and the remainder harvested for Synthetic A. It has been maintained by growing in isolation and ears havrested from erect plants.

Synthetic B - 16 line synthetic

K155	P8	CI.27	NC34
W22	C103	A347	A131
B10	Hy	K4	Hyd 1100.3
Oh33	540	M14	A148

This synthetic was developed and has been maintained in the same way as outlined for Synthetic A.

Pennsylvania Early Synthetic, Pennsylvania Intermediate Synthetic and Pennsylvania Late Synthetic were obtained from Dr. Wernham and are being maintained by sib pollination among 400-500 plants with no selection.

Several of the synthetics listed have been used as source material in various recurrent selection programs in which selection has been for combining ability, improved corn borer resistance, increased oil content, and improved stalk quality. Also, included in these studies have been Lancaster, Kolkmeier, Alph, and Krug open-pollinated varieties. Small supplies of seed of the improved populations are on hand.

Minnesota

Minnesota Synthetic "A" - 13 inbred lines

CMD5	W79A	A498	MS1334
W33	A90	A508	
W59M	WL03	A509	
W65	ND203	A513	

The 13 inbred lines were combined by crossing together 3 double crosses and one single cross in all possible combinations. Inbred A509 was represented twice in the three double crosses. The 6- and

8-way crosses resulting from this interpollination were then interpollinated in a similar all combination crossing system the next year. The synthetic is being maintained by controlled sib pollination among 400 plants without selection. This should be a good source of early lines with considerable resistance to root and stalk lodging.

Minnesota Synthetic 3: 8-line synthetic

Oh5	Oh51A	A73	A295
Oh43	W22	A286	A375

Two double crosses produced and these combined to make an 8-line cross. The synthetic is maintained by controlled sib pollination among 200-300 plants. This synthetic was developed as a source of corn borer resistance germ plasm with yield potential. It is adapted to Southern Minnesota conditions and yields about 80% of the adapted Minhybrids. It has a low percentage of root lodging and stalk breakage.

Missouri Synthetic Strains*

Earworm Syn. C.

L503	L317	Hy	C17	Kys

-5 generations of selection for earworm resistance

Earworm Syn. S

WF9	L501	38-11	GT112	F6
L578	F44			

-5 generations of selection for earworm resistance

European Corn Borer Syn. A

Mid 125	Oh45	W92	B14	C131A
Hy	Oh07	Oh51A	B42	C103
Oh45	GE 281	CI.42A		

European Corn Borer Syn. B

Mo9689	T216	Mo 0225	CI.317B	NC224
A277	4.12504B	NC222	Oh45	Wf9
Mp 414	Mid 125	AB 18	B42	

Stalk Crushing Syn. A

Mo 92754W	Mo3258W	Mo 1602	Mo 21086W	Mo72075W
Mo 72713W	Mo11766W	Mo 9145W	Mo 2RF	

Stalk Crushing Syn. B

Mo 72710	MO22	Mp B233	TRF 4417	Ky126
Mo 61156	GE 281	Mo 61081	T204	Mp 305
Mo 01932	E 663-1			

Stewarts Syn. A				
W20	Ky 27	90	Oh 07	H23
CI.7	K44	33-16	L	R30
K 148	L317	K6	CI.3	Ky 39
Imp. Gold. Bant.				
Stewarts Syn. B.				
M14	Oh29	L5	Oh41	L39
Oh45	T96	K61	P8	Mo572
H25	Oh28			
Corn Belt Syn. A				
L97	NC7	CI.7	L317	C14
Oh40B	WF9	Tr	L503	B18
K148	38-11	W10	R4	187-2
Os420				
Corn Belt Syn. B				
NC34	CI.27	K155	P8	A131
A347	W22	C103	Hyd.1100.3	K4
B10	Hy	A1 48	M14	Oh33
540				
H. maydis Syn. A				
Tr	H22	G	M14	
H. maydis Syn. B				
A71	33-16	CI.7	Ky27	T92
Oh40B	C103	T8	L39	Mo557
Oh43	Mo577	T96	CI.61	K64
K201				
Long Ear Syn.				
L	Hy2	Tr	38-11	90
B10	R59	C102	Os420	C103
Os426	B18	33-16	187-2	Mo 2RF
Ky27				
Stiff Stalk Syn. A				
W20	A25	W17	B18	R30
Ky122	B2	T8	WF9	A71
K150	W62	Mo22	Ky21	K148
Oh51				

-2 generations for European Corn Borer resistance

Stiff Stalk Syn. B

N1	B7	Oh43	Ky36-11	B6
I205	Ll7	K41	CI.21E	H21
Oh45	T8	Ll3	Ll8	Mo572
CI.27				

Earworm Syn. A

SD107	N6	L3	33-16	CI.23
CI.11B	A131	W10	CI.7	Ky39
K41	K155	A148	CI.2	K201
CI.43				

Earworm Syn. B

L304A	N2	B6	A	T96
Ll3	K61	L30		

Missouri Synthetic Strains

*Various methods have been employed in making these synthetics. In general, inbreds were crossed to make single crosses, singles by singles to make doubles etc. Most of these have been maintained by sib-pollinating from 100 to 200 plants.

Nebraska Synthetics*

1. AIII Syn
   Parental Lines - WF9, 38-11, CI.540, CI.4-8, Ohio 40B, R4, Hy, L317 Ohio 67.
   Composite of all possible single cross combinations - random mating for two generations prior to initiation of recurrent selection procedures.

2. B_{III} Syn
   Parental Lines - CI.4-8, 540 — Ind. Pr, P8, Tr, 54-14
   Ill.L, 5120, R4, K, A — Wis. CC5, CC7, CC16
   Ohio 40B, 51A, 28, Oh4 — Minn. A374, A375
   Ia.198, 234, 426 — Nebr. S30, D6, A48
   Kansas K4

   Bulk composite of lines planted at several dates in first and for two subsequent years. Subsequently in recurrent selection program.

3. Krug $_{III}$ Syn
   Krug Yellow dent variety
   Intercrossing of selected S_1 lines - recurrent selection procedures

4. K $_{III}$ (specific) Syn
   Krug Yellow Dent Variety
   S_1 lines evaluated in testcross combination with WF9 x M14 as the tester parent in each cycle of selection.

5. Reid $_{III}$ Syn
Reid Yellow Dent (Nubold Strain) from Central Nebraska
Intercrossing of selected S_1 lines - recurrent selection procedures.

6. Dawes $_{I}$ Syn
Dawes #2 variety (Western Nebraska)
Intercrossing of selected S_1 lines

7. Stiff Stalk Synthetic $_{III}$
Stiff Stalk Synthetic from F. G. Sprague, Iowa Agr. Expt. Sta.
Intercrossing of selected S_1 lines - recurrent selection procedures.

* All populations have been undergoing recurrent selection procedures. Following the initial population makeup as noted the selected S_1 lines in each cycle are intercrossed manually. A composite of these intercrosses is then grown in isolation (1/4 - 1/2 Acre) for synthesis and further increase as needed.

All populations have been selected for yield and agronomic performance.

Ohio

Ohio 24 Line Synthetic: WF9, 38-11, Hy, M14, P8, Ill. A, Ia. I159L1, Ia.I205, Ia.L289, B8, W22, W23, Oh02, Oh7B, Oh26, Oh28, Oh33, Oh40B, Oh41, Oh51A, Oh56A, Oh65, Oh67A, K155. Sixty-six double crosses were produced involving all combinations of twelve single crosses. Equal numbers of seeds from these double crosses were planted in isolation and a composite sample saved as the synthetic. It is being reselected for resistance to corn borer, blight and stalk rot using recurrent selection.

Ohio Cash Synthetic: 32 S2 inbred lines from Cash variety screened for corn borer resistance x Cash O.P. variety. It is being maintained and improved in a recurrent selection program for resistance to corn borer, blight and stalk rot.

Pennsylvania

Pennsylvania Early Synthetic, Intermediate Synthetic and Late Synthetic.
Parental lines: A - for resistance to Helminthosporium turcicum - NC34, CI.15, K155, F5E, J7-6A, CI.23, K175, CI.29, CI.38, CI.42, CI.317, CI.64 and C103.
B - for agronomic characters - Oh40B, Oh26, Oh28, Oh04, A71, A, W23, I205, Os420, WF9, L317, M14, ND273, Oh33, W9, A321, Q63M and Oh51A.

These lines have been combined by various means. Several generations of selfing accompanied with selection for resistance to H. turcicum, smut and stalk rot have been used. After last selfing generation lines were classified as early, intermediate and late and these groups have been grown in three adjacent blocks isolated from other corn in two years. Seed harvested from these are the early, intermediate and late synthetics.

Pennsylvania Sweepstakes Synthetic OP2. - mixed seed of Penn. Early, Intermediate and Late Synthetics was used as male on West Branch Sweepstakes. Top-crossed ears harvested from disease resistant plants. Maintained in isolation. Good resistance to leaf blight, smut and eastern stalk rot.

Pennsylvania Early Synthetic No. 2 - mixed seed of Penn. Early, Intermediate and Late Synthetic was used as male on Early Butler, Early Sweepstakes, College Whitecap, Kautz Longfellow Flint and Switzgable Yellow Dent. Top-crossed ears harvested from disease resistant plants. Maintained in isolation. Good resistance to leaf blight, smut and eastern stalk rot; also has strong root systems.

Pennsylvania South African - American Synthetic O.P.3
Parental lines used: late (a) South African early and late generation inbreds highly resistant to H. turcicum.
late (b) CI.88A, CI.86C, CI.85b, CI.64, CI.28A, CI.81C, CI.91B, CI.87, CI.82A, Gal440, Pd2287-1, KL2, NC34, Gal481, Gal434, H.548, WH4971, H856, K175, Pd2029, Pd2289, Pd2023-12, GE259, B3510.
early (c) Pa. State derivatives of crosses between (Mo21A, Australia Y, Ullstrups U142, NC7, Aus 13B) and (Tr., C103, WF9, A, M14, Pa83C, L317, Hy3 and selfed selections from open pollinated varieties West Branch Sweepstakes and Switzgable Yellow Dent).

Single crosses were made between early and late sources. The synthetic has been maintained in isolation with some selection toward low ear height, disease resistance and excellent roots.

Pennsylvania South African - American Synthetic O.P. 2.
Some as Pa. South African - American Synthetic O.P. 3 with special attention given to strong stalks.

Pennsylvania International Synthetic.
Parental Material. A. Tropical and semi-tropical lines with good roots and resistance to H. turcicum were crossed to Pa602A, (WF9 x Oh51A)(Pa54 x W22) and these F1 crosses were crossed to disease resistant lines in Pennsylvania nursery. Bulked seed of these crosses used as female parent.

B. South Africa lines crossed to much earlier lines and F1 crosses selfed. Seed was classified into six maturity groups according to pollination dates. This seed was planted (10 seed from each ear) in the same field as A (above) and in distinct maturity group. This served as male parent for the Internationsl Synthetic. It was harvested by maturity groups. This synthetic will be maintained by open pollination in isolated blocks.

Virginia

Virginia Corn Belt Southern Synthetic: A composite of pollen collected from the Mississippi, South Carolina and Coker Seed Company nurseries was used on about 25 single crosses of early to late corn belt maturity. Maintained by open pollination in isolation. Some selection for plant and ear type and maturity. A second strain of this synthetic has been selected for two-ear type.

Virginia Exotic Synthetic No. 1 - incorporates Mexican, Carribean and South American germ plasm most of which has been crossed one or more times to Corn Belt material. Maintained in isolation with no selection.

Virginia Exotic Synthetic No. 2 - incorporates very early flint and dent material from Virginia, Pennsylvania and Canada. Maintained in isolation with selection for plant and ear type.

W. A. Russell MOVED for the acceptance of this report and that no further effort be made to make this information available to the Seed Trade. The motion was SECONDED BY N. P. Neal and Passed.

REPORT OF THE SUB-COMMITTEE ON CYTOPLASMIC MALE STERILITY AND RESTORERS

The committee had no report to present.

REPORT OF THE SUB-COMMITTEE ON COOPERATIVE WINTER NURSERIES

Two uniform observation nurseries consisting of 100 inbreds and single-cross hybrids submitted by Missouri, Indiana, Illinois, Minnesota and Michigan were sent to Mexico and Honduras for the 1960-1961 winter crop.

Izucar de Matamoros near Iquala, Mexico

Arrangments were made with Dr. L. C. Coffey of Texas A & M College to grow one of the winter observation nurseries. The field was located on the highway between Izucar de Matamoros and Cuantla, approximately 2 1/2 miles from Izucar de Matamoros which is about 126 miles southeast of Mexico City. The nursery was planted November 23 on a farm belonging to a Mr. Jenkins. Stands for corn and also sorghum were very poor due to a poor seedbed at planting time. Dr. Coffey reports that temperatures are very uniform from day to day at this location--50° nights and 85° by 2 in the afternoon. He conducts duplicate sorghum evaluations and nurseries at Tampico and Matamoros. The Tampico sorghum plantings were excellent this winter. They haven't had a frost at Tampico in 10 years. The plans for next winter are not completed.

Tegucigalpa, Honduras

Dr. G. F. Freytag, chairman of Agronomy, Escuela Agricola Panamericana, Tegucigalpa, Honduras planted the other winter observation nursery on January 7, 1961. The seed was mailed in early October but was apparently delayed by customs, etc. Germination was good and the planting was progressing nicely on the last report from Dr. Freytag.

According to correspondence with Dr. Freytag, the agricultural college has about 200 acres of land in cultivation and several times that in pasture. The land is fertile and they have adequate irrigation facilities and farm equipment. Insects and diseases are problems for corn but they can control the insects and some of the diseases. Dr. Freytag reports that they grew 17 acres of vigorous sweet corn 15 feet tall last summer. There are about 50 students in agronomy who work on the farm half-time. The school is located about one hour's drive over a mountainous road from Teguicigalpa which had modern hotel facilities. They have some facilities for a few visitors at the college.

Dr. Freytag states that a contract could be developed for winter corn breeding nurseries at their college. Students would be available for assistants. He would like to have visiting corn breeders lecture to some of his classes on occasion. It is a 3 hour flight from Miami but usually involves most of a day considering customs, etc. The distance is about the same from New Orleans.

More recent communication from Dr. Coffey regarding plans for next year indicate that they are not planning further work at Matamoros. He states that it is so far south that photoperiod seems to be a factor in blooming. They will probably have plantings at San Fernando, Mexico

112 miles south of Brownsville, Texas and at Tampico, Mexico, 400 miles south of Brownsville. The Tampico nursery location is 40 miles from town where living facilities are available. They have good farmers for both of these locations.

L. F.Bauman
E. R. Leng
M. S. Zuber
E. C. Rossman, Chairman

It was MOVED by E. C. Rossman that with the acceptance of the report that this committee be disbanded. The motion was SECONDED by Russell and passed.

REPORT OF THE SUB-COMMITTEE OF THE MEETING PLACE

The facilities at the Hamilton Hotel having been found quite satisfactory it was recommended that the 1962 meetings be held at the Hamilton Hotel on March 7 and 8.

A motion for acceptance of the report was made by Crane and seconded by Hooker. The motion carried.

REPORT OF THE SUB-COMMITTEE ON CERTIFICATION PROGRAMS

This sub-committee was assigned the task of reviewing certification standards in the Corn Belt States. A questionnaire was prepared and submitted to the Secretaries of the several Crop Improvement Associations. The minimum standards for certification of hybrid corn adopted by the International Crop Improvement Association are presented as a standard of reference. The questionnaire and the summarized answers are presented below.

International Crop Improvement Association --Minimum Standards

Hybrid Corn

The International Crop Improvement Association minimum standards for certification of hybrid field corn seed lists the following basic requirements in publication 19, pp. 33-35.

A. A hybrid to be certified must be produced from certified foundation seed or seed stocks approved by the agricultural experiment station and/or certifying agency.

B. A hybrid to be certified must represent a specific combination that has been compared by a state or governmental agricultural experiment station or certifying agency in adequately replicated experiments with widely used hybrids known to be adapted to the locality.

C. A specific hybrid must be isolated according to minimum field standards given on pages 34 and 35, IV, 1 (2), 1-2-3 of publication 19.

D. A specific hybrid must meet the minimum detasseling requirements given under field standards on page 35, IV, 1 (3) 1 and 2 of publication 19.

E. A specific hybrid must meet minimum seed standards given on page 35, V, of publication 19.

North Central Corn Breeding Research Committee
Questionnaire on Hybrid Corn Seed Certification

I. Do you certify hybrid field corn seed (three-way and/or double crosses) in your state?

Yes - 10
North Dakota none in 1960

II. In your certification program do you adhere closely to each of the five basic minimum requirements for corn seed certification of the International Crop Improvement Association listed as A, B, C, D and E on the attached sheet?

Yes - 8
Yes except for B - 2 (Illinois, Iowa)

III. Do you certify open-pedigree hybrids? Yes -- 10
(a) If yes, circle the latters below representing any of the five minimum requirements followed in certifying this class of hybrids. Please circle appropriate letters.

	A	B	C	D	E
Number of states:	10	8	10	10	10

(b) If the answer to question III is yes, please answer the following:

1. Must a hybrid meet definite performance requirements to be eligible for certification?

Yes- 8
No - 2 (Illinois, Iowa)

2. If a hybrid must meet definite performance requirements to be eligible for certification, must it be certified under the same designated name or number that the performance record was made?

Yes - 7
No. - 1 (Ohio)

3. If a performance record is required, by whom is the comparison made:

Experiment Station - 8

4. After the performance record is established, is the hybrid eligible more or less indefinitely or must the record be maintained currently?

Indefinitely 4 (Minnesota, Indiana, Wisconsin Ohio)
Maintained currently 4 (Missouri, Kansas Nebraska, Michigan)

5. Do you require the applicant to give you the pedigree of the hybrid to be certified?

Yes - 10

6. Please indicate the acreage inspected under this classification (Open-pedigree)

	Iowa	Ohio	Mo.	Minn.	Ind.	Kans.	Neb.	Ill.	Wisc.
in 1957	3279	7061	600	1157	7937	502	1605	2183	5832
1958	2395	6808	649	964	8000	607	2211	2070	5774
1959	2180	7248	802	985	8002	489	2540	3061	6741
1960	1905	6464	842	894	6890	500	2525	2083	5937

No data given by Michigan

7. What proportion of corn planted in your state is open-pedigree certified hybrid corn?

Michigan 8%	Missouri 10%	Kansas 6%	Wisconsin 40-60%
Iowa 2 -3%	Minnesota 5%	Nebraska 15%	
Ohio 25%	Indiana 40%	Illinois no estimate	

8. What proporation of corn planted in your state is open-pedigree non-certified hybrid corn? (It is expected that the figures given as answers to 7 and 8 will be only estimates.)

Michigan 7%	Ohio 5%	Minnesota 9%	Kansas 8%	Illinois no
Iowa $\leq$ 1%	Missouri 15%	Indiana 30%		estimate
Nebraska - no estimate		Wisconsin - no estimate		

IV. Do you certify closed-pedigree hybrids? Yes - 5 No - 5

(a) If yes, circle the letters below representing any of the five basic minimum requirements you follow in certifying this class of hybrids. Please circle the appropriate letters. **A** B C D E

Yes - Wisconsin requires all 5
- Illinois, Minnesota and Iowa do not require B
- Indiana requires C, D and E under an inspected production processing program.

(b) Are the closed-pedigree hybrids which you certify

1. privately developed?

Yes - Iowa, Illinois, Wisconsin

2. coded hybrids made up of Station and/or U. S. Department of Agriculture inbreds?

Yes - Iowa, Illinois, Wisconsin, and Indiana

3. a combination of publicly and privately developed inbreds:

Yes - Iowa, Illinois, Minnesota

(c) If the answer to question IV is yes, please answer the following:

1. Must a hybrid meet definite performance requirements to be eligible for certification?

Yes 1 (Wisconsin)
No 4

2. If a hybrid must meet definite performance requirements to be eligible for certification, must it be certified under the same designated name or number that the performance record was made?

   Yes - 1 (Wisconsin)

3. If a hybrid performance record is required, by whom is the comparison made?

   Wisconsin - Department of Agronomy

4. Do you require the applicant to give the pedigree of the hybrid to be certified?

   Yes - 1 Iowa
   No - 3
   (Illinois has a 2-tag system, blue tag for seed of given pedigree, different color with no pedigree given)

5. Please indicate the acreage inspected under this classification (Closed-pedigree)

	Iowa	Indiana	Minnesota	Wisconsin	(ped) Illinois	(non ped)
in 1957	3414	----	6933	4255	5752	----
1958	125	----	6202	5852	4667	----
1959	236	660	8578	7415	7055	1342
1960	798	258	9208	6215	6176	1732

V. In your opinion, is the certification of corn hybrids essential or desirable in the North Central Region?

   8 states indicated that certification is essential
   1 state indicated that certification is desirable but not necessarily essential
   1 state indicated that certification is not essential and apparently not desirable
   1 state no comment

It was MOVED by Russell and SECONDED by Zuber that the committee be discharged. MOTION PASSED.

REPORT OF THE SUB-COMMITTEE ON STALK ROT

The following plan for a cooperative stalk rot and lodging study was proposed.

Objectives:

1. To identify stalk-rot and stalk-lodging resistant germ plasm that is adapted over a wide area.

2. To investigate the stalk-rot by environment and stalk-lodging by environment interactions. Environment to include locations, years, and isolates of stalk rot pathogens.

3. Correlate field stalk lodging with stalk rot ratings.

4. Correlate stalk rot ratings with yield.

5. Correlate stalk rot reaction of inbreds with their hybrids.

6. Compare artificial with natural stalk rot infections.

Materials:

Series of inbreds and diallel crosses in five maturity groupings as follows:

Maturity Group	No. of Inbreds	No. of Single Crosses
100	9	36
200-300	8	28
500-600	9	36
700-800	10	45
900	10	45

Methods:

1. Each maturity group will be evaluated in (a) yield tests and/or (b) disease tests.

2. Yield tests
   (a) Three replications of each hybrid and of each inbred will be grown in a randomized complete block design using the normal planting scheme employed for yield tests in each state. Inbreds and hybrids to be grown in separate blocks.

(b) Data to be obtained
(1) Days from planting to mid-silk.
(2) % natural stalk rot infection (These data to be taken when a satisfactory differential exists in the test, i.e., when 50% or more plants of susceptible hybrids are infected and stalks of resistant hybrids are still green. A plant is not regarded as infected unless at least one-half of an internode shows definite discoloration or unless the rot has just started and is progressing rapidly as indicated by wilted or recently killed leaves.)
(3) % stalk lodging at harvest.
(4) Acre yield. (Bushels shelled grain 15.5% moisture, hybrids only).

3. Disease tests
(a) Three replications of 10 to 13 plants of each hybrid and of each inbred will be grown in a randomized complete block design. Inbreds and hybrids should be grown in separate but adjacent blocks.
(b) Inoculations
(1) A locally obtained isolate or mixture of isolates of either Diplodia zeae or Gibberella zeae to be used depending upon which organism is believed to be the main cause of stalk rot and stalk lodging in your area. Fresh isolates or isolates of proven pathogenicity should be used.
(2) Method of inoculation is optional, i.e., spore suspension, toothpick, etc.
(3) Inoculation in the second internode (first elongated internode) above ground level.
(4) All entries in a maturity group to be inoculated on the same day as close as possible to the following schedule starting when the majority of entries in a test have reached mid-silk:

Maturity Group	Days after silking
100	1
200-300	3
500-600	10
700-800	20
900	25

(5) Ratings for stalk rot reaction should be made as close as possible to the following schedule:

Maturity Group	Days after inoculation when ratings made
100	18
200-300	21
500-600	28
700-800	30
900	32

(6) Stalks would be split and rated visually for degree of rot spread using a uniform scale.

The following rating scale will be used:

Rating	Description
0.0	no infection
0.1	0 - 3% of inoculated internode discolored
0.3	3.1-6% " " "
0.5	6.1-12.5% " " "
1.0	12.6-25% " " "
2.0	26-50% " " "
3.0	51-75% " " "
4.0	76-100% " " "
4.5	Discoloration of less than 50% of adjacent internode above the inoculated internode
5.0	Discoloration of more than 50% of adjacent internode above the inoculated internode
5.3	Discoloration of 3 internodes - including inoculated internode
5.4	" 4 " " " "
5.5	" 5 " " " "
6.0	Plant killed prematurely.

Workers may find it most convenient to use only ratings 1, 2, 3, 4, 5 or 6. Finer divisions, especially in the lower ratings, should be used if they can be detected.

(c) Data to be obtained
(1) Days from planting to mid-silk.
(2) Date of inoculation and date of rating.
(3) Average stalk rot score of 10 plants of each entry in each replication.

Computation and Summarization of Data:

1. Data to be sent to one location for statistical analyses and summarization.

2. Yield tests
(a) Analyses of variance for yield, lodging, and stalk rot resulting from natural infection for each maturity group at each location.

(b) Above for all locations and years
(1) Determine if the lodging by environment and the stalk rot ratings by environment interactions are significant.

3. Disease tests
(a) Analyses of variance for stalk rot reaction for each maturity at each location for inbreds and for hybrids.
(b) Above for all locations and years.
(1) Determine whether a significant environment by stalk rot reaction interaction exists.

4. Correlate where possible the following relationships:
(a) Stalk rot resulting from natural infection with artificial infection.
(b) Lodging with stalk rot ratings.
(c) Stalk rot ratings with yield.
(d) Stalk rot ratings of inbreds with their hybrids.

Participation:

1. To be voluntary.

2. Each state which desires to participate will grow yield tests, or disease tests, or both yield and disease tests of whatever maturity groups they have an interest in.

3. Illinois to provide randomizations and data sheets for each test and to make the statistical analyses.

P. E. Hoppe
M. S. Zuber
A. L. Hooker, Chairman

After some discussion the report was accepted and the meeting was adjourned at 12:00 noon.

AFTERNOON SESSION, MARCH 1

The discussion program arranged for this period had to be modified because of the inability of some of the scheduled participants to attend. The topics presented for discussion were as follows:

Cycling procedures for the improvement of corn populations	J. H. Lonnquist
Recurrent Selection	L. H. Penny
Corn Silage	N. P. Neal
New Corn Diseases	P. E. Hoppe

The session was adjourned at 5:00 p.m. to permit meetings of the various maturity series sub-committees.

MORNING SESSION, MARCH 2

REPORT OF THE SUB-COMMITTEE ON THE 900 MATURITY SERIES

Double-cross hybrids of 900 maturity were not tested on a regional basis in 1960. Uniform trials of double-crosses are not planned for 1961. If any person is interested in evaluating hybrids of this maturity, it is suggested that he make contacts on an individual basis.

Results from the 900 maturity white three-way cross trials grown in Kansas, Missouri and Kentucky in 1960 are summarized in table 1. The 900 maturity yellow three-way crosses were grown in Nebraska, Kansas, Missouri, Illinois, Kentucky, Virginia and Oklahoma in 1960. The summarized data are presented in tables 2 and 3.

Seed available for testing in 1961 is as follows:

Yellow three-way	Tester B41 x Ky36-11
K9022	CI.44
R134	Mo.0225
R196	Mo.6
T218	CI.21E Standard
T222	T8 "
T224	CI.38B "
T458	K201G(K713) Standard

Yellow three-way	Tester B41 x Ky36-11
T474	AKd 26
T490	AKd 28
T498	
A441-5	Ky105 (T8 x CI.21E)(38-11 x Oh7B) check hybrid
Va 17b	Mo 916 (Mo6 x CI.21E)(Oh29 x Oh7B) " "
Va 9709	VPI 646 (WF9 x T8)(38-11 x C103) " "
White three-way	Tester Ky211 x 33-16
T115	K9515
T315	CI.66 Standard
T331	K6 "
T357	CI.64 "
E184	Ky 27 "
K8425	

The following states plan to grow the specified trial listed below in 1961 and request the amounts of seed indicated:

	Yellow 3-way test	White 3-way test	Single cross grading study
Kansas	---	---	---
Missouri	400	400	200
Kentucky	400	400	200
Virginia	180	---	200
Nebraska	250	---	
Illinois	300	---	
Oklahoma	300	---	
Tennessee	160	160	
Georgia (Experiment)	240	---	
Iowa (C. borer)	50	50	

A 900 maturity single cross grading study will be conducted in 1961. A diallel set of crosses involving 7 lines will be evaluated as well as 3 check single crosses. The inbreds involved are CI.21E, Oh7A, CI.38B, CI.31A, Va. 31, K201G and Ky36-11. The check single crosses are WF9 x 38-11, WF9 x Oh7A and WF9 x T8.

No three-way crosses are being made in 1961 for uniform regional evaluation in 1962.

W. R. Findley
P. J. Loesch
F. A. Loeffel, Chairman

Table No. 1

Summary of performance of uniform 900 maturity white three-way cross series, tester Ky 211 x 33-16, 1960.

Entry No.	Pedigree	Acre yield bu. (1)	Moist. at harv.% (1)	Lodging Root % (1)	Lodging Stalk % (1)	Dropped ears % (1)	Ear ht. ft. (2)	Ear appear. rating (3)	Stand % (1)
01	Ky 211 x 33-16 K6555	95.1	15.6	13.4	12.6	0.7	3.0	1	92.0
02	" K6558	103.5	16.4	4.9	12.2		3.3	1	90.1
03	" K6656	107.1	15.1	3.0	14.9	1.5	3.6	2	93.3
04	" K7526	112.8	16.4	4.4	10.1	0.7	3.6	3	94.2
05	" K7654	107.7	15.9	3.2	15.1		3.6	2	96.4
06	" K7665	103.0	15.9	2.5	18.6	1.1	3.5	3	93.0
07	" Ky 215	99.8	15.9	1.0	7.3	0.5	3.3	3	94.6
08	" Ky 57-169	93.8	16.1	4.5	18.9	1.1	3.1	3	89.6
09	" Ky 57-188	100.6	16.0	3.3	16.7	0.3	2.9	3	97.0
10	" Ky 57-192	108.1	15.5	3.8	19.5	0.3	4.0	2	94.8
11	" Ky 57-201	102.4	16.2	5.6	13.1	0.2	2.9	3	94.5
12	" Ky 57-212	99.9	15.5	10.7	18.6	0.3	3.4	3	95.1
13	" A13-1	96.9	13.8	2.3	13.3	0.4	3.3	3	93.6
14	" F163	112.7	15.3	7.2	7.5	0.6	3.5	1	98.1
15	" Ky 57-242	108.2	15.1	2.0	11.7	2.0	3.4	2	96.2
16	" Ky 57-252	113.1	16.2	7.7	9.2	1.0	3.9	2	97.1
17	" Ky 57-253	110.2	16.1	10.0	11.3	0.2	3.9	2	96.3
18	" Ky 57-256	109.7	16.0	0.7	6.2		3.3	3	96.0
19	" Ky 57-260	111.5	14.4	9.4	13.4	1.3	3.7	3	94.8
20	" Ky 57-264	111.9	15.2	2.4	10.9	0.3	3.3	3	95.1
21	" Ky 57-281	112.5	17.3	3.0	6.3	0.2	3.5	1	96.9
22	" Mo. 1913W	105.5	16.3	7.2	12.0	0.2	3.7	1	89.4
23	" Mo. 11768W	113.3	15.0	0.2	12.0	0.2	3.7	2	95.9
24	" Mo. 11496W(A)	109.7	16.6	13.4	19.4	0.4	3.8	1	95.6
25	"Kans.48:OP90-11-1-1-1	111.7	15.3	6.2	12.9	0.2	3.5	2	91.2
26	"Kans48:OP90-8-1-2-1-1	113.6	16.8	5.2	7.2	0.2	3.6	1	91.5
27	" H30	119.3	15.5	2.5	20.7	2.4	3.8	1	93.3
28	" K55	111.1	16.2	4.1	5.1	0.2	3.2	2	95.9
29	" Ky 27	103.6	15.2	4.5	26.4	1.7	3.7	2	88.0
30	" K64	106.3	14.8	8.9	18.5	0.7	3.8	3	92.5

Table No. 1 (cont'd.)

Entry No.	Pedigree	Acre yield bu. (1)	Moist. at harv.% (1)	Lodging Root % (1)	Lodging Stalk % (1)	Dropped ears % (1)	Ear ht. ft. (2)	Ear appear. rating (3)	Stand % (1)
31	Ky 211 x 33-16 H21	104.4	15.7	5.9	13.5	0.7	3.7	3	92.4
32	" Ky 209	101.9	14.6	6.7	10.7	0.7	3.2	2	93.3
33	US 523W (K55 x K64)(Ky 27 x Ky 49)	116.7	16.2	3.8	14.1	0.3	3.9	1	95.1
	Mean	107.2	15.7	5.3	13.3	0.6	3.5	2	94.0

(1) Sikeston, Missouri; Rossville and Manhattan, Kansas; Hopkinsville and Lexington, Kentucky.

(2) Rossville and Manhattan, Kansas; Hopkinsville and Lexington, Kentucky.

(3) Lexington, Kentucky.

Table No. 2
Summary of performance of uniform 900 maturity yellow three-way cross series, tester WF9 x T8, 1960. (All entries, 5 locations).

Entry No.	Pedigree	Acre yield bu. (1)	Moist. at harv.% (2)	Lodging Root % (2)	Lodging Stalk % (2)	Dropped ears % (2)	Ear ht. ft. (3)	Foliar Disease grade tur (4)	Ear appear. rating (5)	Stand % (1)	Erect Plants (1)
01	(WF9 x T8) R115	89.5	19.0	0.6	18.0		3.6	0.8	4.1	90.2	78.8
02	" R204	92.6	18.3		5.1		3.1	1.3	3.2	95.0	88.2
03	" R205	Variable Stand - Albino Plants									
04	" R206	87.9	18.6		9.1		3.3	1.5	3.0	83.8	81.0
05	" R207	104.6	19.0		3.1	0.2	3.4	1.0	3.7	94.2	89.6
06	" K8031	98.8	20.8	1.9	4.8		2.8	0.8	2.8	95.8	87.5
07	" Ky 108	86.4	20.5		17.7		3.3	0.7	2.9	91.6	78.8
08	" Ky 120	99.2	19.8	6.8	9.3		3.4	1.0	2.5	93.8	79.0
09	" Ky 127	91.4	19.7	1.7	11.2		3.7	1.3	3.4	94.2	83.4
10	" Ky 57-571	88.8	17.9	0.9	3.6	0.2	3.7	1.0	3.5	93.4	89.5
11	" Ky 57-573	92.2	19.3		5.3		3.2	0.7	2.2	94.4	89.5
12	" Ky 57-565	105.5	21.4	1.9	8.6		3.8	0.8	3.0	94.9	83.1
13	" Ky 57-582	94.6	20.8	0.6	15.9		3.5	1.8	2.9	90.1	79.6
14	" Ky 57-610	109.9	21.1	0.3	8.1	0.2	3.9	0.7	2.9	91.5	83.5
15	" Ky 57-619	101.0	19.1	0.2	9.5		3.3	1.0	3.1	95.4	83.0
16	" Ky 57-649	88.4	21.0		11.1		3.3	0.8	3.5	92.5	81.8
17	" Ky 57-683	84.3	18.7		4.7		2.7	1.0	3.7	94.1	90.4
18	" Mo 61012	97.1	21.2	0.2	6.9		3.5	1.3	2.6	90.3	85.5
19	" Mo. 2788B	80.3	19.9	1.1	7.6		3.6	0.5	3.2	61.6	86.3
20	" Mo. 3948	96.9	19.6	0.4	6.6	0.4	3.5	1.2	3.9	96.7	89.2
21	" Mo. 9294	98.0	21.2	0.4	7.5		3.7	1.5	3.0	92.4	88.6
22	" Mo. 53682	89.3	20.9		1.9		2.9	0.5	3.1	92.2	90.9
23	" Mo. 11153	90.2	20.8	0.6	5.2		3.6	1.0	3.4	97.0	88.9
24	" Oh 13	103.9	21.9		9.0		3.4	1.2	4.1	92.8	84.8
25	" Va 21	96.6	18.6		4.4		3.1	1.3	3.2	92.3	89.0
26	" Va 22	95.6	19.7		9.8		3.1	1.7	3.7	94.4	86.5
27	" C103 (Va)	105.2	18.9		4.6	0.2	3.3	0.7	2.5	93.2	91.1
28	" Mo. J.S. 1	96.1	18.6		7.2		3.0	1.2	3.9	91.9	87.6
29	" Mo. J.W.	93.7	22.1	1.4	8.1	0.2	3.0	1.2	3.8	92.5	84.0
30	" Mo. J.L.O.	87.5	21.4	3.4	4.0		3.3	1.8	4.0	93.6	87.2

Table 2. (cont'd.)

Entry No.	Pedigree	Acre yield bu. (1)	Moist. at harv.% (2)	Lodging Root % (2)	Lodging Stalk % (2)	Dropped ears % (2)	Ear ht. ft. (3)	Foliar Disease grade tur (4)	Ear appear. rating (5)	Stand % (1)	Erect Plants (1)
31	(WF9 x T8) Mo. J24	96.0	21.7	0.9	5.8		3.7	1.2	3.3	92.3	89.8
32	" Mo. J.K.B.	101.8	20.9	2.6	8.3		3.7	0.5	2.3	95.9	80.5
33	" Mo. J.S.2	97.0	19.5	0.2	7.1		3.4	1.0	3.4	93.6	88.7
34	" Oh 41	98.2	19.4		13.4		3.4	1.3	2.4	95.4	77.6
35	" CI21E	102.3	19.2	1.3	7.0		3.5	0.7	3.3	96.0	87.4
36	" CI38B	96.2	19.2		11.3		3.2	0.5	2.7	91.5	82.9
37	" 38-11	94.9	18.9		7.6	0.3	3.5	0.8	4.1	95.8	87.7
38	" CI21E x CI42A	101.9	20.7	0.2	11.6		3.4	1.2	3.9	92.1	81.9
39	Ky 105 (T8xCI21E)(38-11xOh7B)	97.4	19.5		12.6		3.9	1.2	3.1	93.0	79.5
40	Mo. 916 (Mo6xCI21E)(Oh29xOh7B)	108.9	19.3		7.2		3.7	0.8	2.1	97.4	87.4
41	V.P.I.646 (WF9xT8)(38-11xC103)	86.3	19.4	0.2	10.0		3.3	0.8	2.9	85.7	84.2
42	K4003 (K713xK711)(K712xOh7B)	102.1	20.1		10.6		3.8	1.0	2.8	96.2	82.0
	Mean	95.8	19.9	0.7	8.3	0.0	3.4	1.0	3.2	92.4	85.3

(1) Oklahoma, Virginia, Missouri, Kentucky (2 locations)

(2) Virginia, Missouri, Kentucky (2 locations)

(3) Virginia, Kentucky (2 locations)

(4) Virginia

(5) Virginia, Kentucky (1 location)

Table 3.

Summary of performance of uniform 900 maturity yellow three-way cross series, tester WF9 x T8, 1960. (Several missing entries 10 locations).

Entry No.	Pedigree	Acre yield bu. (1)	Acre yield bu. (2)	Moist. at harv.% (3)	Lodging Root % (4)	Lodging Stalk % (4)	Dropped ears % (4)	Ear ht. ft. (5)	Foliar Disease grade tur (6)	Ear Appear. rating (7)	Stand % (2)	Erect Plants (2)
01	(WF9 x T8) R115	89.0	86.4	18.3	1.1	10.7		3.6	0.8	4.1	90.7	83.6
02	" R204	97.0	88.3	18.1	0.6	3.4	0.1	3.0	1.3	3.2	94.9	90.7
03	" R205	Variable Stand - Albino Plants										
04	" R206	99.8	81.9	18.8	0.4	5.8		3.2	1.5	3.0	82.4	82.5
05	" R207	97.1	98.8	19.5	1.4	1.9	0.1	3.3	1.0	3.7	91.4	91.0
06	" K8031	89.2	91.3	20.5	1.8	2.9		2.8	0.8	2.8	92.2	87.7
07	" Ky 108	82.6	83.3	20.1	1.3	10.6		3.3	0.7	2.9	91.4	83.4
08	" Ky 120	90.0	92.7	19.8	9.4	5.9	0.2	3.4	1.0	2.5	93.0	79.2
09	" Ky 127	89.8	92.4	19.5	1.4	6.5		3.6	1.3	3.4	93.4	86.5
10	" Ky 57-571	84.8	86.1	18.0	1.1	2.2	0.1	3.6	1.0	3.5	93.1	92.4
11	" Ky 57-573	93.4	92.0	18.8	0.3	3.5		3.2	0.7	2.2	92.0	91.9
12	" Ky 57-565	87.6	98.2	21.2	4.0	5.6		3.7	0.8	3.0	91.7	83.2
13	" Ky 57-582	102.6	92.3	20.3	0.9	10.2	0.1	3.4	1.8	2.9	90.9	81.7
14	" Ky 57-610	104.2	107.6	20.9	0.4	5.1	0.1	3.8	0.7	2.9	92.3	88.8
15	" Ky 57-619	92.2	92.0	18.9	2.1	6.1	0.2	3.2	1.0	3.1	94.4	83.5
16	" Ky 57-649	83.4	86.7	20.7	0.6	6.9	0.1	3.3	0.8	3.5	92.2	85.6
17	" Ky 57-683	75.8	81.5	18.2	1.6	3.1	0.1	2.7	1.0	3.7	91.8	90.7
18	" Mo. 61012	97.6	93.0	20.7	1.1	4.4		3.4	1.3	2.6	90.2	85.5
19	" Mo. 2788B	107.0	Missing Data									
20	" Mo. 3948	81.4	91.6	19.7	0.8	3.9	0.5	3.4	1.2	3.9	95.5	91.1
21	" Mo. 9294	90.4	93.5	21.0	1.1	4.6		3.6	1.5	3.0	91.3	90.5
22	" Mo. 53682	----	90.6	20.7	1.9	1.1	0.1	2.9	0.5	3.1	92.0	89.9
23	" Mo. 11153	----	89.8	19.7	0.9	3.1	0.1	3.6	1.0	3.4	94.4	90.1
24	" Oh 13	80.2	97.9	21.7	2.1	5.6	0.1	3.3	1.2	4.1	90.7	85.7
25	" Va. 21	----	91.7	18.9	1.6	2.7		3.0	1.3	3.2	91.8	89.6
26	" Va. 22	----	92.4	19.1	0.4	5.7		3.1	1.7	3.7	94.4	89.4
27	" C103 (Va)	104.2	100.1	18.9	2.4	2.9	0.2	3.2	0.7	2.5	91.8	91.6
28	" Mo. J.S. 1	88.2	91.2	18.3	1.4	4.4	0.1	2.9	1.2	3.9	90.3	89.3
29	" Mo. J.W.	85.8	88.8	21.9	5.8	5.0	0.1	3.0	1.2	3.8	92.0	81.9
30	" Mo. J.L.O.	92.7	84.1	20.8	3.0	2.4		3.3	1.8	4.0	89.9	88.5

Table 3. (cont'd.)

Entry No.	Pedigree	Acre yield bu. (1)	Acre yield bu. (2)	Moist. at harv.% (3)	Lodging Root % (4)	Lodging Stalk % (4)	Dropped ears % (4)	Ear ht. ft. (5)	Foliar Disease grade tur (6)	Ear Appear. rating (7)	Stand % (2)	Erect Plants (2)
31	(WF9 x T8) Mo. J24	69.2	92.5	21.3	0.8	3.6		3.5	1.2	3.3	92.6	91.7
32	" Mo. J.K.B.	88.7	97.2	20.5	4.7	4.9		3.7	0.5	2.3	92.6	80.9
33	" Mo. J.S.2	55.8	90.8	19.1	0.4	4.3		3.3	1.0	3.4	90.9	91.5
34	" Oh 41	95.4	94.1	19.4	1.9	8.4		3.3	1.3	2.4	94.7	81.9
35	" CI21E	105.7	95.0	19.5	2.5	4.1		3.4	0.7	3.3	93.4	89.3
36	" CI38B	88.8	90.7	18.7	0.1	7.0	0.2	3.2	0.5	2.7	90.2	87.4
37	" 38-11	91.4	89.1	18.5		4.6	0.2	3.4	0.8	4.1	92.1	90.3
38	" CI21E x CI42A	102.8	97.0	20.5	1.5	7.3		3.4	1.2	3.9	90.4	84.2
39	Ky 105 (T8xCI21E)(38-11xOh7B)	96.8	92.9	19.7	0.1	7.9		3.8	1.2	3.1	90.8	85.0
40	Mo. 916 (Mo.6xCI21E)(Oh29 x Oh7B)	92.9	Missing Data									
41	V.P.I. 646(WF9xT8)(38-11xC103)	75.8	Missing Data									
42	K4003 (K713xK711)(K712xOh7B)	90.6	98.8	20.5		6.8		3.6	1.0	2.8	92.5	85.9
	Mean	90.3	92.0	19.8	1.7	5.1	0.1	3.3	1.1	3.2	91.9	87.2

(1) Nebraska.

(2) Oklahoma, Virginia, Missouri, Kentucky (2 locations),Kansas (2 locations),Illinois (2 locations).

(3) Virginia, Missouri, Kentucky (2 locations), Kansas (2 locations), Illinois (2 locations).

(4) Virginia, Missouri, Kentucky (2 locations), Kansas (2 locations).

(5) Virginia, Kentucky (2 locations),Kansas (2 locations).

(6) Virginia.

(7) Virginia, Kentucky (1 location).

REPORT OF THE SUB-COMMITTEE ON THE 700-800 MATURITY SERIES

The 800 maturity double crosses were grown in Illinois, Iowa, Indiana, Kansas, Kentucky, Missouri, Nebraska, Ohio, and Oklahoma in 1960. Summarized data are presented in table 4.

Hybrids nominated for testing in 1960 are as follows:

Hybrid	Pedigree
Ia.5286	(WF9 x 38-11)(B14 x B51)
Ia.5306	(B14 x CI.31A)(B51 x R101)
Ky205W	(Ky211 x 33-16)(Ky209 x H21)
Ill. 3042	(WF9 x B14)(B40 x Oh45)
Ill. 3183	(WF9 x R153)(R105 x R153)
Ill. 3343	(H49 x H55)(R71 x R74)
Ind. 0622	(WF9 x C103)(H71 x B14)
Mo.1005	(WF9 x B14)(Mo.4529 x Mo.5)
Mo.1023	(WF9 x B41)(Mo.5 x C103)
Ia.5116	(WF9 x B14)(Oh41 x B45)
Ia.5118	(WF9 x Hy)(B14 x CI.31A)
Ia.5120	(WF9 x 38-11)(B14 x B45)
U.S. 13	(WF9 x 38-11)(Hy x L317)
AES 809	(WF9 x P8)(Oh43 x C103)
U.S.523W	(K55 x K64)(Ky27 x Ky49)

Table 4. Summary of performance of uniform 800 maturity double crosses, 1960.

Pedigree	Acre yield (1)	Moisture (2)	Lodging Root (3)	Lodging Stalk (4)	Ear ht. Grade (5)	Days to ½ silk (6)	Stand (7)
	bu.	%	%	%			%
Ia.5018 (WF9 x B7)(B14 x CI.31A)	104	21.2	2	16	3.6	73	95
5116 (WF9 x B11)(Oh41 x B45)	105	19.8	4	19	3.3	72	95
5118 (WF9 x Hy)(B14 x CI.31A)	103	20.3	5	23	3.6	72	96
5120 (WF9 x 38-11)(B14 x B45)	103	18.6	1	20	3.5	73	95
Ill.3042 (WF9 x B11)(B40 x Oh45)	103	20.6	4	20	3.2	70	97
3183 (WF9 x R154)(R105 x R153)	98	21.0	8	24	3.2	70	94
3343 (H49 x H55)(R71 x R74)	106	21.4	1	17	3.3	70	94
3347 (H49 x H55)(R74 x R101)	109	21.0	3	21	3.6	71	95
3357 (H49 x H51)(R74 x R101)	107	19.9	1	21	3.1	70	97
Ind.9608 (WF9 x C103)(H55 x Oh43E)	104	20.1	2	18	3.0	71	94
9622 (H55 x B14)(C103 x Oh43E)	106	20.5	1	19	3.4	71	96
K. 4099 (WF9 x Hy)(B38 x K758)	100	21.0	11	36	3.7	71	94
Ky.205W (Ky211 x 33-16)(Ky209 x H21)	94	20.5	10	21	3.8	72	93
Mo.1005 (WF9 x B14)(Mo.4529 x Mo.5)	105	20.0	3	14	3.2	70	96
1023 (WF9 x B41)(Mo5 x C103)	108	21.1	9	19	3.3	71	96
U.S.13 (WF9 x 38-11)(Hy x L317)	103	19.9	5	33	4.0	72	96
AES 809 (WF9 x P8)(Oh43 x C103)	100	21.2	1	20	3.0	70	95
810 (WF9 x H50)(Oh45 x Oh7B)	101	19.9	2	20	3.2	70	96
U.S.523W(K55 x K64)(Ky27 x Ky49)	112	23.0	7	26	3.9	76	96
Mean	104	20.6	4	21	3.4	71	95
Two-year performance (1959-60)							
Ia. 5018	95	20.6	4	11	3.4		
Ill. 3357	99	19.5	3	14	3.2		
U.S.13	93	19.5	3	27	4.0		
AES 809	95	20.6	1	15	3.2		
810	96	19.5	4	13	3.3		
U.S.523W	98	22.5	14	19	3.9		

(1) Iowa, Illinois, Indiana, Kansas, Kentucky, Missouri, Nebraska, Ohio and Oklahoma
(2) Iowa, Indiana, Illinois, Kansas, Kentucky, Missouri, Nebraska, Ohio
(3) Iowa, Kansas, Missouri
(4) Kansas, Kentucky, Missouri, Oklahoma
(5) Iowa, Kansas, Kentucky, Missouri, Ohio
(6) Ohio
(7) Iowa, Illinois, Indiana, Kansas, Kentucky, Missouri, Ohio, Oklahoma

The 800 maturity three-way crosses, involving WF9 x Hy and B14 x CI.31A as testers, were grown in Iowa, Illinois, Indiana, Kansas, Kentucky, Missouri, Nebraska, Ohio, Oklahoma, and Virginia. The summarized data are presented in table 5.

Seed available for testing in 1961 is as follows:

Line	Source	WF9 x Hy	B14 x CI.31A
Ia.59:1521	Stiff Stalk Syn. (H.D. 2187)	x	x
Ia.59:1634	41.2504B x B14/3	x	-
Ia.59: 1988	B18 x A73	x	x
Va. 14a	K201 x C103/2	x	x
H60	(Mo.21A x CI.14)(Oh28 x Ill.90)	x	x
H74	((WF9 x K148)(CI.15 x K175))WF9	-	x
H75	((C103 x Tr)(CI.23 x NC34))C103	x	x
R71	Corn Borer Syn #2 (Snelling)	x	x
R151	Corn Borer Syn #2 (Snelling)	x	x
R154	Corn Borer Syn #2 (Snelling)	x	x
Mo.11662	L304A x B1	x	x
Mo.	B41 x Mo.11	-	x
N6		x	x
Oh41		x	x

Table 5. Summary of performance of uniform 800 maturity 3-way crosses, 1960

Pedigree	Acre Yield in Bushels (1)	Moisture Percent (2)	Lodging Percent Root (3)	Lodging Percent Stalk (4)	Ear ht. Grade (5)	Days to 1/2 Silk (6)	Barren plants Percent (7)	Stand Percent (8)
WF9 x Hy /1	106	20.6	8	17	3.4	70	26	90
(WF9 x Hy) x R178	88	19.9	0	12	3.4	69	19	95
x R194	102	21.7	28	24	3.6	71	26	92
x R201	96	18.0	2	12	3.7	70	32	94
x R202	111	20.5	9	21	3.6	69	38	93
x R203	83	20.5	3	14	3.3	73	44	90
x Oh45B	106	21.4	10	20	3.5	69	31	92
x Oh45C	112	21.2	20	14	3.4	68	24	93
x Ia58:1323 (B54)	106	19.8	12	12	3.5	69	33	94
x Ia58:1341	101	21.6	4	13	3.6	72	27	94
x K7-47	106	21.2	12	14	3.6	69	26	95
x K7-50	96	19.9	2	14	3.2	69	10	96
x K6-3	106	22.0	52	11	3.5	72	45	94
x Mo. 61078	107	21.8	5	14	3.7	70	36	94
x Va.11b	103	20.9	6	14	3.2	69	21	96
x Va.15a	100	18.5	4	24	3.3	69	30	95
x Va.20	106	21.4	2	9	3.2	70	21	96
x Va.9-701	105	19.8	1	14	3.5	70	26	97
x N221-2	88	21.1	33	20	3.5	71	37	94
x N4402-2	107	24.0	32	14	3.6	71	29	93
x N2155-1-1	106	23.1	36	27	3.7	70	33	95
x N2179-3-2	95	22.9	27	20	3.7	72	43	95
x N2276-10-2	102	24.2	20	20	4.2	73	35	95
x N2288-7-1	99	19.4	0	15	3.5	73	18	93
x 38-11	102	18.9	4	23	3.8	69	29	95
x L317	108	21.2	22	27	4.1	72	14	94
B14 x C.I-31A /1	105	24.6	5	7	4.1	73	23	91
(B14 x CI31A) x R178	96	21.7	2	10	4.0	70	22	95
x R194	103	22.8	10	14	4.1	72	27	94
x R201	100	21.4	2	9	3.9	70	17	94
x R202	109	21.7	5	15	3.9	70	23	95
x R203	102	22.4	0	9	3.6	72	22	95

Table 5 (Cont.)

Pedigree	Acre Yield in Bushels (1)	Moisture Percent (2)	Lodging Percent Root (3)	Lodging Percent Stalk (4)	Ear ht. Grade (5)	Days to 1/2 Silk (6)	Barren plants Percent (7)	Stand Percent (8)
(B14 x CI.31A) x Oh45B	109	23.2	1	12	3.5	69	34	93
x Oh450	105	22.4	3	9	3.5	69	24	95
x Ia58:1323 (B54)	113	21.0	9	7	3.7	70	21	94
x Ia58:1341	98	22.3	0	9	3.9	72	39	93
x K7-47	105	22.4	0	11	3.9	70	27	92
x K7-50	101	21.5	3	12	3.3	70	21	96
x K6-3	102	22.3	7	7	3.4	73	46	96
x Val1b	103	22.4	3	7	3.4	71	22	94
x Val5a	105	20.8	0	17	3.5	70	13	94
x Va20	105	22.5	2	7	3.3	71	37	96
x Va9-701	102	21.0	0	9	3.5	72	15	96
x N2210-2	101	23.1	21	15	4.0	72	30	96
x N4402-2	93	27.1	19	11	3.8	73	29	94
x N2155-1-1	108	24.0	4	16	4.0	71	22	95
x N2179-3-2	111	23.8	22	11	4.3	72	32	96
x N2276-10-2	104	26.6	14	9	4.4	75	40	95
x N2288-7-1	103	24.3	4	9	3.7	74	38	95
x WF9	107	20.6	3	11	3.7	70	29	96
x 38-11	103	20.4	0	15	4.2	73	38	95
x Hy	106	22.0	3	14	4.0	71	26	94
x L317	104	22.7	4	17	4.3	73	32	94
Mean	103	21.8	9	14	3.7	71	28	94

(1) Iowa, Illinois, Indiana, Kansas, Kentucky, Missouri, Nebraska, Ohio, Oklahoma, Virginia

(2) Iowa, Illinois, Indiana, Kansas, Kentucky, Missouri, Nebraska, Ohio, Virginia

(3) Iowa

(4) Iowa, Indiana, Kansas, Kentucky, Missouri, Oklahome, Virginia
(5) Iowa, Indiana, Kansas, Kentucky, Missouri, Ohio, Virginia
(6) Indiana, Ohio
(7) Virginia
(8) Iowa, Illinois, Indiana, Kansas, Kentucky, Missouri, Ohio, Oklahoma, Virginia

/1 Not included in the Missouri trials

The 700 maturity double crosses were grown in Illinois, Iowa, Indiana, Kansas, Missouri, Nebraska, and Ohio in 1960. Summarized data are presented in table 6.

Hybrids nominated for testing in 1961 as are follows:

Hybrid	Pedigree
Ia. 5355	(WF9 x B14)(A257 x B50)
Ia. 5364	(WF9 x M14)(B14 x B55)
Ill. 3152	(WF9 x M14)(B14 x Oh43)
Ill. 3182A	(WF9 x R105)(R151 x R154)
Ill. 3022	(WF9 x B14)(N22A x Oh43)
Ia. 5092	(WF9 x M14)(B14 x B46)
Ia. 5093	(WF9 x M14)(B37 x B46)
Ia. 5095	(WF9 x Oh43)(B14 x B46)
Ia. 4297	(WF9 x I205)(M14 x 187-2)
AES 704	(WF9 x Oh43)(B14 x B37)
U.S. 13	(WF9 x 38-11)(Hy x L317)

Table 6. Summary of performance of uniform 700 maturity double crosses, 1960.

Pedigree	Acre yield (1)	Moisture (2)	Lodging Root (3)	Lodging Stalk (4)	Ear ht. grade (5)	Days to ½ silk (6)	Stand (7)
	bu.	%	%	%			%
Ia.5092 (WF9 x M14)(B14 x B46)	105	20.8	2	3	2.9	70	95
5093(WF9 x M14)(B37 x B46)	104	21.5	1	3	3.0	71	95
5095(WF9 x Oh43)(B14 x B46)	106	21.7	1	2	2.9	70	95
Ind.9602(WF9 x H55)(B14 x Oh43E)	112	21.9	1	2	3.2	70	96
Ill.3022 (WF9 x B14)(N22A x Oh43)	113	21.3	1	2	3.0	69	95
3152 (WF9 x M14)(B14 x Oh43)	100	20.3	0	2	2.9	68	94
3182A(WF9 x R105)(R151 x R154)	107	21.7	7	9	3.2	68	94
3315A(WF9 x Hy2)(R109B x B14)	87	22.6	3	4	3.0	71	93
Ia.4297(WF9 x I205)(M14 x 187-2)	99	20.1	9	9	3.1	69	94
AES 703 (WF9 x Oh43)(B14 x B38)	106	21.8	0	2	3.1	70	93
704 (WF9 x Oh43)(B14 x B37)	103	22.0	0	1	3.0	70	94
U.S.13 (WF9 x 38-11)(Hy x L317)	108	22.6	2	10	3.9	71	94
Mean	104	21.5	2	4	3.1	70	94

(1) and (2) Iowa, Indiana, Kansas, Missouri, Nebraska, Ohio, Illinois
(3) Iowa, Kansas, Missouri (4) Iowa, Indiana, Nebraska, Kansas, Missouri
(5) Iowa, Kansas, Missouri, Ohio (6) Ohio
(7) Iowa, Illinois, Indiana, Kansas Missouri, Ohio

The 700 maturity three-way crosses, involving WF9 x B14 and B37 x Oh43 as testers, were grown in Illinois, Indiana, Iowa, Missouri, Nebraska, Ohio, and Virginia in 1960. The summarized data are presented in table 7.

Seed available for testing in 1961 is as follows:

Line	Source	WF9 x B14	Oh43 x B37
Ia.59:1545	Stiff Stalk Syn (HD. 2479)	x	x
59:1620	N32 x B14/2	-	x
Pa. 881 p	K155 x A321	x	x
Pa. 887 p	((Oh04 x NC34)A71) Hy	x	x
Va. 11a	M14 x C103	x	x
Va. 9520	Oh43 x C103	x	-
Va. 9347	Oh43 x M14	x	-
R151	Corn Borer Syn #2 (Snelling)	x	x
R154	Corn Borer Syn #2 (Snelling)	x	x
R181	Corn Borer Syn #2 (Snelling)	x	x
Oh43		x	
M14		x	
B37		x	

Table 7. Summary of performance of uniform 700 maturity 3-way crosses, 1960

Pedigree	Acre Yield in Bushels (1)	Moisture Percent (2)	Lodging Root (3)	Lodging Stalk (4)	Ear ht. Grade (5)	Days to 1/2 Silk (6)	Barren plants percent (7)	Stand Percent (8)
WF9 x B14 /1	115	21.8	6	2	3.5	70	25	91
(WF9 x B14) x R108	78	22.1	2	5	3.1	71	43	86
x R175	101	22.0	6	4	3.0	68	27	92
x R192	93	23.8	9	6	3.0	71	23	90
x R200	83	23.3	6	4	2.9	71	30	87
x Oh45B	106	24.9	10	4	3.2	69	31	91
x Oh45C	104	24.9	14	2	2.9	68	19	91
x Ia58:1323 (B54)	102	22.0	8	3	3.0	69	26	90
x Ia58:1321 (B55)	107	26.6	8	9	2.9	68	16	91
x H64	91	23.6	0	2	3.6	71	24	92
x H66	92	24.6	11	2	2.7	71	22	90
x H72	75	24.9	6	6	2.9	72	33	86
x N82076	101	26.4	4	3	3.5	71	27	86
x N211	97	24.9	6	2	2.8	68	10	90
x Va.25	99	24.8	7	4	2.8	68	12	86
x Va.26b	92	23.6	3	3	2.8	66	32	86
x Va.9-525	93	24.3	2	2	2.9	69	29	84
x Va.9-538	82	22.5	2	4	2.6	65	13	73
B37 x Oh43 //	105	26.1	0	2	2.4	67	39	91
(B37 x Oh43) x R108	92	22.4	1	5	3.1	69	44	94
x R175	97	23.7	5	7	2.8	68	71	95
x R192	90	24.8	1	4	2.8	70	43	95
x R200	93	25.2	2	14	2.9	69	30	92
x Ia58:1323(B54)	102	24.0	3	3	2.9	68	34	94
x H64	87	24.6	0	3	3.1	71	41	92
x H66	100	26.1	1	1	2.8	71	38	90
x H 72	97	25.6	3	10	2.8	69	35	93
x N211	99	24.2	2	2	3.1	66	25	93
Mean	97	24.3	5	4	2.9	69	30	90

(1) and (2) Iowa, Illinois, Indiana, Missouri, Nebraska, Ohio, Virginia
(3) and (4) Iowa (5) Iowa, Indiana, Missouri, Ohio, Virginia
(6) Indiana, Ohio (7) Virginia
(8) Iowa, Illinois, Indiana Missouri, Ohio, Virginia /1 not included in the Missouri trials

The following lines were submitted for use in producing three-way crosses for testing in 1962.

Line	Source
Ia.60:1229	Stiff Stalk Syn. x Multiple Cross
Ia.60:1252	(M14 x A206) x Oh4C
B51	Corn Borer Syn #1
B57	Midland
H78	(Oh45 (Mo21A x NC34)) Oh45
H79	Synthetic A
N20	SSS_I Syn.
N28	SSS_I Syn.
N29	$Krug_I$ Syn.
N30	$Krug_I$ Syn.
Oh43B	((Oh45TMS x Wood burn TRF)Oh45)Oh43
Ok22	Southwestern Yellow Dent
Pa.70	Oh40B x (?)
Ia.60:1279	N32 x B14
Mo.4524	C103 x 187-2

E. R. Leng
J. H. Lonnquist
L. H. Penny, Chairman

REPORT OF THE SUB-COMMITTEE ON THE 400, 500 and 600 MATURITY SERIES

400-500-600 testcrosses for testing in 1961.

Lines crossed onto WF9 x M14 and W64A x Oh43

Ia.59:1588	Mich. 60-1
B50	" 60-2
Oh32	" 60-3
Oh57	" 60-4
R181	" 60-5
H73	

Check hybrids: AES 514
Ohio K24
Ohio M14

400-500-600 Uniform Tests

State	Seed Requested	
	3-way	Double
South Dakota	250	---
Ohio	250	250
Michigan	250	360
Illinois	300	300
Wisconsin	---	---
Minnesota	240	360
Nebraska	250	250
Kansas	---	---
Iowa	170	210
Missouri	---	---
Indiana	200	400

Inbreds nominated for 3-ways to be made in 1961 for testing in 1962.

Oh501	(W24 x B2)
Oh502	24-line synthetic
Oh503	
Mich 61-1	(L317 x Ms211)
Mich 61-2	Mich 250(Oh51 x R53)(W10 x Ms206)
Mich 61-3	(W10 x Ill. High Prot.)W10)W10
Mich 61-4	38-11 x R53
Mich 61-5	(A234 x H16) 4-A-B-B
N4	Dawes #2
N22	Krug
N22A	Krug (N22 outcross)
H76	(P8 x Chase 214) P8
H77	[(W22 x R39)(CI.15 x K148)] W22
A548	A375 x P.L.E.
A595	Ia. Syn #1
A601	Minn. Syn #2
A626	(A322 x B2)
A627	(A392 x R61)
A619	(A171 x Oh43) Oh43

Double crosses for testing in 1961

Mich 59-495	(WF9 x Oh51A)(A569 x Ms126)
Mich 59-515	(W32 x W64A)(Ms109 x Ia.24)
Mich 59-538	(W32 x W64A)(Ms109 x Ms111)
Mich 56-115	(Ms57 x Ms100)(B14 x Ms80)
N2339B	(WF9 x B14)(N24 x Oh43)
N2346B	(WF9 x B14)(N22 x Oh43)
N2360B	(WF9 x B14)(N6 x Oh43)
Ill. 1952	(W64A x A545)(M14 x B14)
Ill. 3301	(M14 x Oh43)(R168 x B14)
Ill. 3302A-1	(W64A x M14)(R172 x B14)
Iowa 5063	

Check hybrids: AES 514
Ohio K24
Ohio M14

Single, three-way and double cross uniform tests were gorwn in 1960. The data obtained are recorded in tables 8 through 12.

Table 8. Summary of performance of the uniform 400, 500 and 600 maturity single crosses.

Hybrid			Yield	Moisture	Lodged	Lodged Root	Lodged Stalk	Dropped ears	Ear Ht.	Days to silk	Smut	Leaf blight
			bu.	%	%	%	%	%	in.		%	grade
			(1)	(1)	(2)	(3)	(3)	(4)	(5)	(6)	(7)	(2)
A427	x	A570	95	29.0	70	1	2	1.5	41	74	0	2.8
A427	x	A622	98	27.3	92	1	1	.5	45	75	0	4.3
A427	x	Ml4	108	27.4	74	0	2	1.0	36	75	2	2.8
A427	x	Oh43	106	27.7	99	0	2	1.0	36	73	0	2.8
A427	x	W64A	99	26.0	84	0	0	1.0	35	73	3	4.8
A427	x	R158	104	28.8	77	0	3	1.0	45	74	0	4.5
A427	x	R181	113	24.6	84	1	5	.5	47	73	2	3.8
A427	x	Ms128	99	26.3	82	0	4	1.0	45	75	0	1.8
A427	x	Ms129	107	27.8	55	0	1	1.5	43	75	0	3.3
A570	x	A622	104	27.8	33	3	1	0.0	46	75	0	3.5
A570	x	Ml4	114	27.7	39	2	3	.5	38	72	3	3.0
A570	x	Oh43	114	28.1	55	1	1	0.0	37	72	0	2.3
A570	x	W64A	117	26.9	29	4	1	0.0	40	72	0	3.8
A570	x	R158	111	27.6	46	1	1	0.0	47	74	0	3.3
A570	x	R181	117	26.4	31	2	2	.5	40	73	4	3.8
A570	x	Ms128	104	28.1	58	2	5	.5	43	73	0	1.0
A570	x	Ms129	100	29.7	38	3	1	1.0	48	76	2	2.3
A622	x	Ml4	106	27.0	75	3	2	.5	43	75	0	2.8
A622	x	Oh43	114	27.2	87	1	0	.5	39	73	0	2.8
A622	x	W64A	98	26.4	84	1	1	0.0	39	72	14	4.5
A622	x	R158	112	26.3	83	0	2	.5	50	73	2	3.3
A622	x	R181	112	25.7	72	11	2	0.0	50	73	2	4.0
A622	x	Ms128	105	27.0	75	2	2	0.0	51	75	0	1.5
A622	x	Ms129	107	27.5	89	0	0	0.0	50	76	3	3.3
Ml4	x	Oh43	107	27.2	65	0	1	0.0	31	70	12	2.5
Ml4	x	W64A	107	28.8	82	1	2	0.0	33	74	3	3.8
Ml4	x	R158	113	27.1	65	1	4	1.0	44	73	3	2.8
Ml4	x	R181	125	25.7	72	1	1	0.0	41	73	4	3.3

(1) Ohio, Minnesota, Michigan, Nebraska, Indiana
(2) Ohio
(3) Michigan, Minnesota, Indiana.
(4) Nebraska, Minnesota.
(5) Indiana.
(6) Indiana, Ohio.
(7) Minnesota

Table 8. (cont'd.)

	bu.	%	%	%	%	%	in.		%	grade
Ml4 x Msl28	99	25.4	78	1	3	0.0	42	73	4	1.0
Ml4 x Msl29	112	28.7	75	1	3	.5	37	74	2	2.5
Oh43 x W64A	113	26.1	60	1	1	0.0	33	69	7	3.3
Oh43 x R158	119	26.7	63	0	2	.5	4.	72	2	2.0
Oh43 x R181	119	26.7	53	0	1	0.0	37	73	2	3.3
Oh43 x Msl28	112	28.0	62	0	1	1.5	40	73	3	1.0
Oh43 x Msl29	117	29.8	56	0	2	1.0	41	74	0	1.8
W64A x R158	101	25.6	87	3	3	1.5	46	73	9	4.3
W64A x R181	109	23.2	83	4	2	0.0	39	71	2	4.3
W64A x Msl28	112	25.8	81	1	2	0.0	41	72	4	2.3
W64A x Msl29	112	27.3	82	2	1	.5	39	73	2	4.5
R158 x R181	122	25.5	71	2	1	0.0	54	74	3	4.3
R158 x Msl28	111	25.1	76	1	10	2.0	51	73	0	2.3
R158 x Msl29	104	28.6	54	2	1	1.5	51	76	2	3.3
R181 x Msl28	114	25.5	74	4	5	0.0	45	73	3	2.5
R181 x Msl29	110	27.8	64	4	1	0.0	44	74	0	3.5
Msl28 x Msl29	107	27.1	72	2	7	.5	45	75	0	2.3
AES 514	107	25.3	45	1	2	0.0	43	71	0	4.0
Oh K24*	108	22.7	57	4	6	2.0	45	73	-	3.5

* Not in Minnesota test.

Table 9. Average performance of inbreds in single crosses, 400-500-600 maturity.

Inbred	Yield	H2O	Lodging	Ear Ht.	Days to ½ silk	Leaf blight grade
A622	118	26.9	4	46	74	3.3
R181	116	25.7	5	44	73	3.6
Oh43	113	27.5	2	38	72	2.4
R158	111	26.8	4	48	74	3.3
Ml4	110	27.2	3	38	73	2.7
A570	108	27.9	4	42	73	2.9
W64A	108	26.2	3	38	72	4.0
Msl29	108	28.3	3	44	75	3.0
Msl28	107	26.5	5	45	74	1.7
A427	103	27.2	3	41	74	3.5

Table 10. Summary of performance of the uniform 400, 500, 600 maturity three-way crosses.

Hybrid	Yield	Yield	Moisture	Lodged		Ear ht.	Days to silk	Leaf blight
				Root	Stalk			
	bu.	%	%	%	%	in.		grade
	(1)	(2)	(2)	(3)	(4)	(5)	(6)	(3)
(WF9 x M14) Oh45B	109	105	26.9	35	5	43	73	2.0
(WF9 x M14) Oh45C	103	99	27.1	39	1	40	74	2.0
(WF9 x M14) H71	102	95	25.2	48	3	45	76	3.5
(WF9 x M14) Port.-6	93	91	25.7	64	5	39	72	4.0
(WF9 x M14) H54	102	99	27.1	59	4	36	74	3.8
(WF9 x M14) R158	95	93	24.4	57	2	44	73	3.5
(WF9 x M14) R193	104	100	27.7	59	3	43	74	2.8
(WF9 x M14) R199	-	-		-	-	-	-	-
(WF9 x M14) Mich 59-1	103	98	24.3	75	9	46	74	2.3
(WF9 x M14) Mich 59-2	95	96	23.5	86	7	41	71	4.0
(WF9 x M14) Mich 59-3	96	94	22.3	88	2	36	72	3.0
(WF9 x M14) Mich 59-4	103	95	23.0	80	5	37	71	3.0
WF9 x M14	109	106	24.8	89	6	39	71	3.8
(Oh43 x W64A) Oh45B	98	95	28.2	43	2	37	73	2.8
(Oh43 x W64A) Oh45C	97	95	27.5	47	2	38	72	2.5
(Oh43 x W64A) H71	105	95	25.8	37	1	38	72	2.8
(Oh43 x W64A) Port.-6	104	99	25.6	68	4	40	72	3.0
(Oh43 x W64A) R54	102	99	27.8	54	1	38	73	3.3
(Oh43 x W64A) R158	105	101	24.6	61	3	44	71	3.3
(Oh43 x W64A) R193	104	96	27.5	39	1	44	72	2.3
(Oh43 x W64A) R199	93	91	28.3	47	2	32	70	3.0
(Oh43 x W64A) Mich 59-1	118	110	23.8	77	7	48	72	2.0
(Oh43 x W64A) Mich 59-2	102	99	25.2	88	6	44	70	3.5
(Oh43 x W64A) Mich 59-3	99	97	21.1	76	2	36	70	3.0
(Oh43 x W64A) Mich 59-4	999	96	23.3	46	5	38	70	2.5
Oh43 x W64A	105	104	23.5	71	1	35	69	2.8
(WF9 x Oh43) Oh45B	102	102	30.4	*23	2	43	74	2.0
(WF9 x Oh43) Oh45C	97	96	29.8	33	2	38	72	2.3
(WF9 x Oh43) H71	104	104	28.2	37	2	41	73	3.0
(WF9 x Oh43) Port.-6	98	98	27.4	42	4	42	73	3.5
(WF9 x Oh43) R54	100	101	29.5	39	1	38	73	2.8
(WF9 x Oh43) R158	98	100	26.1	50	4	41	73	3.3
(WF9 x Oh43) R193	99	98	27.8	29	6	42	72	2.5

* Start only two locations - Michigan and Indiana.

(1) Based on all testers at Ohio, Michigan, Nebraska, Illinois and Indiana

(2) Only comparisons within tester group are valid since same states did test lines on all testers (see below)

(3) Ohio

(4) Michigan Nebraska, Illinois, Indiana

(5) Indiana

(6) Indiana and Ohio

Tester	Ohio	Mich	Nebr	Ill	Ind	Minn	S.Dak	Iowa	Mo
WF9 x M14	X	X	X	X	X		X	X	
Oh43 x W64A	X	X	X	X	X		X	X	
WF9 x Oh43	X	X	X	X	X				
W64A x W22	X	X	X	X	X	X			X
M14 x W64A	X	X	X	X	X	X			X

Table 10. (cont'd.)

Hybrid	Yield	Yield	Moisture	Lodged		Ear Ht.	Days to silk	Leaf blight
	bu.	%	%	%	%	in.		grade
	(1)	(2)	(2)	(3)	(4)	(5)	(6)	(3)
(WF9 x Ch43) R199	94	96	30.2	33	3	35	72	3.0
(WF9 x Ch43) Mich 59-1	114	115	26.1	69	2	49	73	2.0
(WF9 x Oh43) Mich 59-2	104	102	26.3	84	9	42	72	3.3
(WF9 x Oh43) Mich 59-3	102	103	25.2	64	3	43	72	2.8
(WF9 x Oh43) Mich 59-4	98	100	24.7	56	3	37	70	2.5
WF9 x Oh43	111	111	26.4	44	1	41	71	2.5
(W64A x W22) Oh45B	109	108	26.0	51	6	43	73	4.0
(W64A x W22) Oh45C	107	106	26.1	47	2	39	72	3.3
*(W64A x W22) H71	68	69	26.0	51	2	36	75	3.0
(W64A x W22) Port.-6	89	92	24.2	66	2	40	72	4.3
(W64A x W22) R54	95	97	26.4	66	1	39	74	4.0
(W64A x W22) R158	96	97	24.0	71	5	43	71	4.8
(W64A x W22) R193	104	101	26.4	55	7	41	74	3.5
(W64A x W22) R199	106	107	26.5	71	3	36	70	4.0
(W64A x W22) Mich 59-1	113	110	23.7	86	7	49	73	3.8
(W64A x W22) Mich 59-2	99	99	23.0	93	4	42	69	4.0
(W64A x W22) Mich 59-3	99	97	21.2	88	2	37	70	3.5
(W64A x W22) Mich 59-4	104	102	22.5	70	6	38	70	3.5
W64A x W22	111	111	24.6	82	6	41	72	4.0
(M14 x W64A) Oh45B	108	106	26.3	56	2	38	72	2.0
(M14 x W64A) Ch45C	104	103	26.8	46	4	34	72	2.3
(M14 x W64A) H71	105	103	25.3	52	2	41	74	3.3
(M14 x W64A) Port.-6	99	99	24.7	76	5	39	72	4.0
(M14 x W64A) R54	105	103	26.8	83	1	38	72	4.0
(M14 x W64A) R158	105	104	24.1	83	3	42	72	4.0
(M14 x W64A) R193	113	109	26.8	59	6	43	73	2.5
(M14 x W64A) R199	108	107	26.9	69	3	36	70	3.3
(M14 x W64A) Mich 59-1	111	107	24.0	87	4	48	72	3.3
(M14 x W64A) Mich 59-2	106	105	23.0	83	3	42	70	4.0
(M14 x W64A) Mich 59-3	98	94	21.1	88	5	35	71	3.0
(M14 x W64A) Mich 59-4	99	97	22.5	61	7	35	69	3.3
M14 x W64A	109	105	23.0	92	1	35	69	3.8
AES 514	106	101	24.4	41	2	43	70	3.5
AES 601	-	111	23.0	-	-	43	64	-
K24	105	96	24.0	58	3	41	72	3.0
M15	-	97	21.2	-	-	47	63	-

*H71 related to W22

Table 11. Summary of performance of lines involved in the uniform 400, 500 and 600 three-way crosses.

Hybrid	Yield	H20	Lodging	Ear ht.	Leaf blight
	bu.	%	%	in.	grade
Oh45B	105	26.1	3	41	2.6
Oh45C	102	26.0	2	38	2.5
H71*	104	24.7	2	40	3.1
Port.-6	97	23.9	4	40	3.8
R54	101	26.0	2	38	3.6
R158	100	23.1	3	43	3.8
R193	105	25.8	5	43	2.7
R199**	100	26.7	3	35	3.3
Mich 59-1	112	22.7	6	48	2.7
Mich 59-2	101	22.6	6	42	3.8
Mich 59-3	99	20.6	3	37	3.1
Mich 59-4	101	22.0	5	37	3.0

* Performance on related tester W64A x W22 omitted.

** Average of only 4 testers.

Table 12. Summary of performance of the uniform 400, 500, 600 double crosses.

Hybrid		Yield	Moisture	Lodged Root	Lodged Stalk	Dropped ears	Ear Ht.	Days to silk	Smut	Leaf blight
		bu.	%	%	%		grade		%	grade
		(1)	(1)	(2)	(2)	(3)	(4)	(5)	(6)	(5)
Ia 5052	(WF9 x M14) (Oh51A x W182D)	96	26.0	5	4	1	2.9	78	3	4.0
Ia 5063	(WF9 x M14) (B14 x A257)	104	27.3	4	1	0	3.0	81	2	3.5
Ia 5129	(WF9 x M14) (B9A x W182D)	97	25.0	5	2	1	2.8	78	2	4.5
Ill 3302A-1	(W64A x M14) (R172 x B14)	103	25.8	0	2	0	3.0	79	6	3.4
Ill 1952	(W64A x A545) (M14 x B14)	97	25.6	3	1	0	2.8	80	3	4.0
Ill 3301	(M14 x Oh43) (R168 x B14)	106	26.3	2	1	0	2.9	78	5	3.0
Ill 6201	(WF9 x B14) (R53 x 07)	90	25.5	6	6	0	2.7	78	2	4.0
Mich 57-36	(Ms57 x Msl00) (B14 x Ms80)	98	25.0	7	3	1	3.1	78	2	3.2
Mich 56-115	(Oh43 x Msl11) (Msl43 x Msl13)	103	26.1	4	3	1	2.8	77	5	3.5
Mich 59-462	(WF9 x M14) (R168 x Msl09)	102	25.8	12	1	0	2.9	79	2	4.0
Mich 59-487	(WF9 x Oh51A) (R168 x Msl09)	95	25.8	4	2	0	3.0	78	0	3.6
Mich 59-515	(W32 x W64A) (Ia24 x Msl09)	105	27.2	5	3	0	3.1	79	0	3.5
AES 514	(B14 x A239) (A295 x W64A)	94	24.0	4	3	0	3.0	77	3	4.0
AES 601	(WF9 x W22) (M14 x B14)	99	26.7	6	3	0	2.9	79	4	4.2
Ohio K24	(WF9 x Oh51A) (Oh33 x Oh40B)	89	24.1	1	5	1	3.1	78	-	4.1
Ohio M15	(A x W23) (Oh26 x Oh51)	87	22.3	4	8	1	2.8	78	-	3.6
Iowa 4297	(WF9 x I205)(M14 x 187-2)									

(1) Ohio, Missouri, Minnesota, Illinois, Nebraska, Iowa, Michigan and South Dakota.
(2) Missouri, Minnesota, Illinois, Michigan, Ohio, Iowa and Nebraska.
(3) Minnesota, Nebraska and Iowa.
(4) Iowa and Missouri.
(5) Ohio.
(6) Minnesota.

N. P. Neal
E. C. Rossman
L. F. Bauman, Chairman

REPORT OF THE SUB-COMMITTEE ON THE 100, 200 and 300 MATURITY SERIES

100 to 300 hybrids nominated for testing in 1961

Hybrid	Pedigree
Minn. 167	Co-100 x A556:ND203 x W153R
Minn. 156(805)	B8 x ND203: A498 x MS1334
Minn. 157	A498 x A90:MS1334 x ND203
AES202	CMD5 x W59M:A509 x MS1334
ND34	SD105 x ND203:A90 x MS1334
ND42	ND405 x ND203:A90 x MS1334
SD45	ND405 x ND203:B8 x A90
MS57-130	MS1334 x B8:WD10 x MS206
MS59-78	MS1334 x B8:MS92 x MS144
MS59-82	MS1334 x R53:MS1341 x MS91
MS59-129	MS1334 x MS143:MS55 x MS92

Inbred lines nominated for all possible single crosses for 1962 testing.

Inbred	Origin
A554	(WD x WF9) $WD_{(2)}$
ND474	(WD x WF9) $WD_{(2)}$
Co-303	?
SD5	Minn. 13
MS142	Mich. 250
ND363	(ND203 x A375) $ND203_{(2)}$
ND405	(ND230 x Oh51A)
B8	(4-county wh-conv.)
W451	?
W673	?
W675	?

Table 13. Summary of performance on double crosses of 200 and 300 maturities compared in 1960.

Pedigree	Hybrid No.	Days to silk	Av. moist. %	Acre yield, bushels by stations N.D.	Wis.	Mich.	Ont.	Av.	% of 202	Lodging % av. Root	Stalk	Shelling %	Rating 1 to 5 Plant	Ear	Av. height inches Plant	Ears
No. Trials		2	7	2	1	3	1	7	7	2	3	3	ND	ND	ND	ND
A498xA90:MS1334:ND203	M157	58	25.5	75.2	93.1	59.2	92.5	80.0	109	7.1	5.2	80.5	2.5	1.8	86	32
B8xND203:A498xMS1334	M156	58	23.4	72.0	86.0	48.7	93.9	75.2	102	8.0	4.9	82.2	2.6	2.3	87	34
ND230xND203:A90xMS1334	ND307	58	24.6	71.2	74.8	50.8	76.3	68.3	93	10.0	5.7	79.7	2.5	2.5	84	31
CMD5xW59M:A509xMS1334	AES202	58	24.9	70.3	85.2	47.8	90.7	73.5	100	10.4	3.6	79.6	2.7	2.4	84	32
W33xA509:A508xND203	AES204	57	23.9	69.8	70.1	37.8	73.7	62.9	86	14.1	11.1	80.0	2.9	2.5	80	30
WDxND203:CV3xW103	AES101	53	19.0	63.4	66.5	35.5	-	-	81@	13.7	12.9	81.9@	3.1	3.0	80	28
	Wis273		26.0@	-	106.7	44.4	-	-	113@	14.1	5.6	84.5@	-	-	87	34@

Root lodging - N. Dak. & Mich.
Stalk breakage - N. Dak. Mich. & Ontario
Shelling percent - N. Dak., Wis., & Ontario
@ Adjusted average.

Table 14. Summary of performance on double crosses of 200 and 300 maturities tested for the 2-year period 1959-1960.

Hybrid	Acre yield, bushels N.D.	Wis.	Mich.	Ont.	Av.	Moist. % av.	Lodging % Root	Stalk	Shelling %
Station years	2	2	2	2	8	8	4	6	6
M157	71.6	84.0	58.6	79.2	73.4	27.1	8.6	4.4	79.7
M156	67.1	77.3	57.4	80.0	70.5	25.4	10.0	3.5	81.9
ND307	68.7	73.7	49.9	71.1	65.9	26.5	12.5	4.4	79.1
AES202	65.4	83.4	46.9	79.8	68.9	26.1	8.2	2.8	79.9
AES204	63.8	66.8	44.4	68.5	60.9	25.9	11.6	7.3	79.9

Table 15. Rating of inbred lines for cold test by the Hoppe Rolled Towel Method.

Inbred line	C.T. rating	No. years tested		Inbred line	C.T. rating	No. years tested		Inbred line	C.T. rating	No. years tested	
Flint lines		59-56,55-54		Dent. lines		59-56,55-54		Dent. lines		59-56,55-54	
ND30	1	4	1	A204	1-2	2	2	W297	2	1	1
ND33	2	4	1	A208	1-2	2	2	W307	2	1	1
ND36	1	4	1	A488	1-2	2	2	W319B	3	1	1
CM38	1	4	2	A495	3	4	2	W325A	2	1	1
CM6	2	1	-	A498	1-2	4	2	W329A	2	1	1
CM7	3	1	-	A502	2	2	2	W349	3	1	1
CM20	2	1	-	A508	1	4	2	W353A	3	1	1
Mt.52A	1	2	1	A509	2-3	4	2	W393	4	1	1
W85	1	2	2	A513	1-2	2	2	W9(C4)	1	4	1
Q503	1	2	2	A556	4	2	2	M13(C8)	1-2	4	2
Q573	1-2	2	2	NDB8	1-2	3	1	W25(C6)	2	4	-
Dent lines				SDB8	1-2	1	2	Io.153	3-4	4	-
MS24	2	1	2	WD	4-5	4	2	W153R	3	4	-
MS1334	4	4	2	W22	2	-	2	WF9	3-4	1	1
CM2	2	-	2	W23	1	-	2	SD5	1	2	1
CM3	4	3	2	W33	2-3	4	2	SD26	2	-	2
CMV3	1	4	2	W37B	2	-	2	SD48	1-2	3	2
CM5	3	-	2	W37A	2	-	2	SD105	1-2	3	2
CMR5	1	2	2	WH1	3	-	2	B14	4	-	1
CMD5	1-2	4	2	WH3A	4	-	2	B37	4	-	1
CM145	2-3	2	2	WH3B	3	-	2	Oh41	4	1	1
CO-131	1-2	1	-	WH7	1	-	2	Oh43	4	1	1
Q28	2-3	2	2	W59E	1	-	2	Oh45	2	1	1
Q153	2	2	2	W59M	3	3	2	Oh51A	2	1	1
Q155	3	2	2	W65	1	-	2	New N.D. lines			
CO-106	2	2	2	W75	3	-	2	(203)332	1-2	3	-
Mt.52K	2	-	2	W79	2	-	2	" 363	3-4	2	-
MS210	3	1	2	W79A	2	4	2	" 369	2	3	-
ND1	2	-	2	W103	2	4	2	" 376	2	3	-
ND5	2	-	2	W119	2	-	2	(230)397	2	4	-
ND52	2-3	3	2	W155	3	-	2	" 399	2	2	-
ND167	3	4	2	W167	2	-	2	" 402	2	4	-
ND203	4	4	2	W182B	5	2	2	" 405	2	4	-
ND211	3-4	3	2	W183A	2	-	2	" 408	1-2	3	-
ND230	1+	4	2	W187	2	3	2	(WD) 464	3	4	-
ND255	2	4	2	W191B	2	2	2	" 468	3	4	-
ND283	4-5	4	2	W199H	4	2	2	" 471	5	3	-
A90	3	4	2	W271E	4	-	2	" 473	5	2	-
A90R	4	4	1	W273C	4	-	2	" 474	4	3	-
A96	1	2	2	W275J	2	2	2	(ND30)319	1	2	-
A111	1	4	2	W277D	1-2	1	-	(ND1) 314	2	3	-
A116	2	4	2	W279M	3	-	2	(ND5) 444	2	2	-
A117	3-4	-	2	W285C	3	-	2	(203) 334	1	2	-

Cold test rating:

1 - 81-100 percent germination
2 - 61-80 " "
3 - 41-60 percent germination
4 - 21-40 " "
5 - 0-20 " "

Only double crosses of 200 and 300 maturities were included in the uniform tests in 1960. The data are recorded in tables 14 and 15. No other State being interested in the double cross M156, Minnesota indicated their intention of putting this hybrid in commercial production under the designation Minhybrid 805.

Data are presented in table 15 on relative cold test ratings of a series of inbred lines.

E. H. Rinke
A. M. Strommen
Wm. Widdakas, Chairman

M. S. Zuber raised a question on designation of A.E.S. hybrids when one of the component lines was replaced by a blight resistant recovery of the same line. Specifically the problem involved the substitution of CI.64 for K64 in A.E.S. 904W. After considerable discussion it was MOVED by Zuber and SECONDED by Neal that the new hybrid be designated 904aW. MOTION PASSED.

The session was adjourned at 11:30 a. m. A meeting of the Executive Committee followed and Dr. W. A. Russell was elected Chairman for 1962.

Committees for 1961-62

Preservation of Germ Plasm.
J. H. Lonnquist, E. J. Dollinger and D. B. Shank (Chairman)

Grouping of Lines for Breeding Purposes.
N. P. Neal, L. F. Bauman, W. A. Russell (Chairman)

Cytoplasmic Male Sterility and Restorers.
J. H. Lonnquist, W. A. Russell and J. B. Beckett (Chairman)

Cooperative Winter Nurseries.
L. F. Bauman, E. J. Dollinger, M. S. Zuber, E. C. Rossman (Chairman)

Meeting Place.
D. B. Shank, M. S. Zuber, P. Crane (Chairman)

Certification Programs.
N. P. Neal, L. F. Bauman, W. A. Russell (Chairman)

Stalk Rot.
Paul Hoppe, M. S. Zuber, A. L. Hooker (Chairman)

Uniform Tests in the 900 Maturity Series.
W. R. Findley, Jr., P. J. Loesch and F. A. Loeffel (Chairman)

Uniform Tests in the 700-800 Maturity Series.
E. R. Leng, J. H. Lonnquist and L. H. Penny (Chairman)

Uniform Tests in the 400-500-600 Maturity Series.
N. P. Neal, E. C. Rossman and L. F. Bauman (Chairman)

Uniform Tests in the 100-200-300 Maturity Series.
E. H. Rinke, A. M. Strommen and Wm. Wiidakas (Chairman)

ROSTER OF ATTENDANCE

Canada

Donovan, L. S.
Giesbrecht, John

Illinois

Beckett, J. B. (USDA)
Hooker, A. L.
Lambert, R. J.

Indiana

Bauman, L. F.
Brunson, A. M. (USDA)
Crane, Paul
Ullstrup, A. J. (USDA)

Iowa

Dicke, F. F. (USDA)
Foley, D. C.
Hallauer, A. R. (USDA)
Penny, L. H. (USDA)
Russell, W. A.

Kansas

Scott, G. E. (USDA)

Kentucky

Loeffel, F. A.

Maryland (Beltsville)

Sprague, G. F. (USDA)

Michigan

Rossman, E. C.

Minnesota

Sentz, J. C.

Missouri

Zuber, M. S. (USDA)

Nebraska

Lonnquist, J. H.
Sankara Rao, M.
Williams, Norman

Ohio

Dollinger, E. J.
Findley, W. R. (USDA)
Guthrie, W. I. (USDA)

North Dakota

Teschendorf, R. E.
Wiidakas, William

South Dakota

Beatty, D. W.
Shank, D. B.

Wisconsin

Davis, J. R.
Hoffbeck, L. J.
Hoppe, P. E. (USDA)
Neal, N. P.
Rowe, P. R.
Strommen, A. M.